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ORIGINAL ARTICLES.

THE ULTIMATE RESULTS, IN MY OWN EXPERIENCE, OF VAGINAL HYSTERECTOMY FOR CANCER ORIGINATING IN THE CERVIX UTERI.[1]

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AT a recent meeting of the New York Obstetrical Society the question was raised as to the ultimate good resulting from the complete removal by vaginal hysterectomy of the uterus and appendages in cases in which the cancerous condition had begun in or had involved the cervix uteri; and the statement was made that the results were such as to raise the question as to the propriety of the operation in such cases. I took occasion to say at that meeting that my own results had been such as not only to encourage me, but to fully convince me that the operation was not only justifiable, but absolutely demanded; and I stated (from memory only) that my success had been somewhat over 50 per cent. In the very short paper which is given this evening I wish to give the statistics of my own cases in this *one* class, and to emphasize some points in the technique of the operation which may have had something to do with its success.

I find that during the past twelve years, among my cases of vaginal hysterectomy performed for various conditions, and nearly all of them for malignant disease, I have had sixteen (which constitute about one-fourth of the total number) in which the disease *primarily* involved the cervix.

These cases, for purposes of convenience, have been differentiated as follows: Five in which the cervix alone was involved, four in which the cervix and the upper part of the vagina were involved, and seven in which the cervix and the uterine body were implicated. Of the sixteen cases, twelve were operated upon prior to November, 1892 (Case No. 1 on May 17, 1884, and Case No. 12 on October 21, 1892). From this it will be seen that these twelve cases all date back three and one-fourth years or more. Out of these twelve cases three died within four days succeeding the operation (one from shock and two from septicemia). Of the remaining nine, recurrences of the disease took place in two instances, one dying about one year and four months, and the other about eighteen months, after the operation. Three others were lost sight of after six months or a year, but up to that time had not suffered from relapse. The remaining four, which complete the twelve cases operated upon prior to November, 1892, were all seen and examined at least three and a quarter years subsequent to the operation (some of them at a much later period), and in every case there was absolute exemption from redevelopment. Thus we have 33⅓ per cent. cures in these twelve cases. In addition to the twelve cases mentioned I can add four of more recent date, as follows: One which occurred twenty-two months since, two last September, and one last October. Of these four cases, three are perfectly well, but in the fourth case (which is one of the two September cases) an unfavorable result was predicted during the operation, and at the present time there are evidences of return in the cicatrices in the vault of the vagina. Of course these four cases are of too recent date to base any statistics upon as to the ultimate result.

The youngest case among the sixteen was 34 years of age, and the oldest 72 years. Two were single, fourteen married or had been married, and nearly all of these fourteen had borne children. The three deaths occurred among my *earlier* cases, and were due to faulty or prolonged manipulations during the operation. If they had been operated upon during the past five years the death-rate would have been decidedly smaller, since I have had no deaths from this operation during that time. A few words as to the *technique* of the operation. I have stated that four of the sixteen cases had involved a certain portion of the vaginal mucous membrane as well as the cervix, and it is especially to these cases and the method used for the thorough removal of the diseased condition, together with a certain amount of healthy adjacent tissue, that these remarks apply. In a paper bearing the title "The Limitations for Vaginal Hysterectomy in Malignant Diseases of the Uterus," which I read at the

[1] A portion of An Inaugural Address of the President of the New York County Medical Association, delivered on February 17, 1896.

eighth annual meeting of the Fifth District Branch of the New York Medical Association, in Brooklyn, May 24, 1892, and which was published in the New York *Medical Record*, July 9, 1892, I spoke of certain cases in which the disease had extended from the cervix downward upon the mucous covering of the vagina, and I quote from that paper the following: "This condition is generally brought about simply by attrition. The epitheliomatous disease of the cervix coming in direct contact with the mucous surface of the upper part of the vagina simply irritates at first, but gradually, as the membrane becomes denuded, the poison becomes absorbed by it, and a focus for extension is added to the case. Fortunately for quite a time, in most cases, the conservative resources of nature are called into play, and a deposit of healthy, newly formed connective-tissue proliferation takes place in the vaginal wall, thus separating it from glandular and cellular structures beyond. In such cases an examination will show an extension of the disease to the mucous surfaces simply, the vaginal wall slightly, if at all, thickened, and no cancerous infiltration whatever under the wall, the vagina in all respects, excepting as to its mucous membrane, being practically normal. This condition does not in any way contra-indicate the operation. It simply complicates it by necessitating the removal of that portion of the vaginal wall upon which the disease has started, together with a half-inch or more of the healthy tissue below. This is best done by making the circular incision through the vaginal wall at a proper point at the beginning of the operation, dissecting upward and ligating any vessels which may cause sufficient bleeding to require it, and then as you reach the outer border of the cervix go on in the usual manner and extirpate the uterus." At that date I had had two such cases—one of three *years'* and one of three *months'* standing. Very shortly after reading the foregoing extract I had another. These three cases now date back as follows: No. 1, nearly seven years; No. 2, four years; and No. 3, three years and four months. These patients are perfectly well at the present time. No. 4 was operated upon in September last, and, as previously stated in the early part of this paper, an unfavorable prognosis was given at the time of the operation, from the fact that during the operation it became evident that the disease, although not infiltrated beyond the vaginal mucous membrane, had developed so deeply into the right broad ligament as to probably render *total* extirpation of all its *foci* an impossibility.

In operating upon these cases in which the vaginal mucous membrane had become involved I found it best in two instances to do a preliminary curettage, cleaning away all necrotic or loose tissue with the sharp curette, and then treating the case locally by the application of dry iodoform gauze every second day for a week or ten days, thus rendering the parts as aseptic as possible before extirpation was done.

I would like to add a few words as to another point bearing upon the thoroughness of the operation itself, and that is considering the amount of the broad ligaments which can be removed by the vaginal route. There are a certain number of cases in which there exists a thickening of the broad ligaments frequently associated with contraction in one or both, and resulting in more or less fixation of the uterus. Of course such a condition, if malignant, may occur in *any* case of malignant disease of the uterus, but much more frequently, I believe, in cases in which the carcinoma has extended to the uterine body, or has had its origin there, than in cases in which the cervix, or the cervix and the vaginal mucous membrane, have furnished the starting-point. In such cases the point to decide, if possible, is this: Is it the result of an old inflammatory trouble or a true infiltration of cancerous deposit? If the former, vaginal hysterectomy is eminently proper. If the latter, vaginal hysterectomy is hardly justifiable; and it is questionable whether the abdominal method will furnish better results.

These cases are extremely hard to differentiate, but when coming in contact with them it has been my custom to operate upon all such as gave a history of former pelvic inflammation, and who were not suffering from the ordinary cancerous cachexia. It is a matter of surprise sometimes as to the thoroughness of the removal of the broad ligaments in these cases by the vaginal route, if we combine the use of the hemostatic forceps with the ligature in cases in which there is great difficulty in controlling the hemorrhage by ligatures alone.

My results in such cases have been sufficiently good to warrant a continuance of operative work in the same direction. It may be that the combined abdominal and vaginal method, as described by Dr. J. H. Clark, resident gynecologist at the Johns Hopkins Hospital, in the July and August (1895) numbers of its *Bulletin*, in which the broad ligaments are very thoroughly removed, will give better results than the vaginal method. I shall be glad to hear the ultimate results of cases operated upon by this method.

In this short *résumé* of my cases I have confined my remarks (with the exception of the one digression just read) to the *ultimate results* in cases in which the disease, as far as could be determined, *began* in the cervix uteri; these cases, as before stated, being but a limited number as compared with all my cases of vaginal hysterectomy for malignant disease. Before closing it might be well to add that in all my cases of vaginal hysterectomy the ureters have escaped injury. In two cases I have had vesico-vaginal fistulæ follow. In one of these the fistula was sewed up some five months after the removal of the uterus, and the patient is in perfect health to-day. The other case, a hospital patient, was one of the three mentioned as having been lost sight of. These statistics, although giving 33⅓ per cent. ultimate success, would have been better still had it not been that my entire death-rate from this operation performed for various conditions during the past twelve years is confined to the three cases among my twelve earlier operations; and these cases happen to belong to the class dealt with in this paper. As stated earlier in the paper I attribute them to faulty technique, prolonged manipulation, and inexperience in performing the operation as far back as tenor twelve years ago.

SCURVY IN INFANTS, WITH REPORT OF A CASE.[1]

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SCURVY is a disease that has been recognized and described since very early times. Soldiers in the army of the Roman Empire suffered from its ravages; and sailors that crossed the Atlantic in the wake of Columbus fell victims to this scourge. In the army and navy of England and the United States, scurvy was for many years responsible for great loss of life, decimating garrisons and rendering long sea-voyages almost impossible. After several centuries of such sacrifice, investigators at last found that the disease was invariably due to a deficiency or absolute lack of fresh vegetable food; also that in lemon juice there existed a simple means, not only of preventing the disorder, but of checking it when it appeared. Following these discoveries, scurvy became so rare that it is now a curiosity in the practice of medicine, with which the majority of physicians never meet.

[1] Read before the San Francisco Medico-Chirurgical Society.

But strangely enough this disorder is within the last decade again coming prominently into notice; and most strange of all, it now makes its appearance, not in soldiers or in sailors, but in babies; not in the camp or on the sea, but in the nursery of homes where no deprivation exists, but plenty and even luxury are found. I have said it now makes its appearance, but I should rather say it is now being recognized; for there is no doubt that many infants have in the past been allowed to die who were suffering from scurvy, but treated for some disorder with which they were never afflicted. That infants do have scurvy was first brought to the notice of the profession by Dr. W. B. Cheadle, of the Great Ormond Street Hospital for Sick Children, London. He first called attention to the fact in a paper published in the *Lancet* in 1878. At various times since then he has continued to report cases, and by his writings other investigators have likewise had their eyes opened to the truth. There is no doubt now that scurvy does occur in infants; that it is due here to the same causes that bring it about in adults; that it presents the same group of symptoms, and that it is susceptible of cure by the same treatment. No textbook on the diseases of children ever mentioned it before the present decade; but in the recent textbooks and in medical journals articles are now freely devoted to its consideration.

Etiology.—What causes this disease in infants? Exactly the same factor that figures in the scurvy of adults, viz., *deprivation of fresh food.* Infants nursed at the breast do not have scurvy; it is a disease peculiar to infants artificially fed. But neither do infants fed upon a proper preparation of cows' milk present symptoms of scurvy, for cows' milk, when fresh, possesses, like human milk, antiscorbutic properties. It is when milk has been long subjected to high temperature, as in sterilization or in condensation, that it loses this antiscorbutic property and becomes no longer fresh. Most fertile, however, of all foods in the production of scurvy in infants are the patent proprietary preparations that are bottled or canned and stand on the shelf for months before they are administered. They are stale, they lack in nutritious properties, and the sailor in Arctic seas or the soldier in garrison fed exclusively on canned meats and hardtack is no more liable to scurvy than the baby fed exclusively on these proprietary foods. It is suggestive, too, that scurvy most frequently occurs in the first eighteen months of life. During the first year, food of but one kind is usually given, and if that kind is bad,

the nutrition is bound to suffer, but after the first year the diet begins to be varied, so that from some of its food the infant receives the needed antiscorbutic elements. Hence the rarity of scurvy in infants over eighteen months of age.

Symptoms.—An infant with scurvy is usually pale and anemic, more or less emaciated, and cross and fretful in disposition. Such symptoms, however, only mean that the nutrition is poor, and are in no way peculiar to scurvy. But there is a group of symptoms that are characteristic—so much so that any one of them creates suspicion of scurvy, and occurring together they render the diagnosis positive.

1. The most peculiar manifestation of the disease is fusiform or cylindrical swelling of one or both thighs. The swelling is evidently painful to the infant when touched or examined, and the limb lies flexed and abducted, or straight and helpless. This condition is due in scurvy to a subperiosteal hemorrhage about the shaft of the femur. The enlargement usually extends from hip to knee, but is greatest about the centre of the thigh. It sometimes involves as well the upper part of the leg, below the knee, but is always less marked there. The superficial tissues of the limb are apt to be edematous, but, owing to the depth of the blood effusion, fluctuation cannot be detected, nor is there discoloration of the surface. This is the symptom that the mother will probably notice first. She observes that her baby cries and frets when it is bathed, or has its napkin changed, and, in searching for a cause of the unusual sensitiveness, happens upon the enlargement of the limb.

2. Another characteristic feature of scurvy is the condition of the gums. If the infant has teeth, the gums will be found swollen, spongy, dark purple in color, bleeding freely on touch, or perhaps covered with dry blood. Such an appearance is so striking that it can scarcely fail to attract the attention of the mother or nurse, and when seen by the physician who knows the symptoms of scurvy, it should make him very suspicious of the presence of that disease. But this condition does not show itself in the infant before the teeth have appeared. The gums then are found entirely normal, or at most display here and there a few ecchymotic spots. It is important to remember that in an infant with no teeth the characteristic spongy gums are not, as a rule, present; forgetting this, one might be led astray on diagnosis by the absence of this peculiar symptom, even though other symptoms of scurvy were plainly present.

3. Equally striking is the occurrence, in a baby too young to have possibly been indulging in fighting, of a typical "black eye." The mother one day notices that there is a dark circle around her infant's eye, as if some one had struck it and made a "black and blue" mark. This gradually fades away and disappears, but the peculiarity may show itself in a few days in the other eye, or may recur in the same eye at varying intervals. It is due to a subcutaneous hemorrhage into the tissues about the eye. This sympton is so strange that if it does not alarm the mother enough to make her summon a physician at once, it will nevertheless impress her so deeply that she will not fail to recall it when asked about the matter. A "black eye" coming on in an infant without traumatism, and perhaps repeated several times, can rarely be due to anything else but scurvy.

These are the most typical and characteristic symptoms of scurvy in infants, but there are others that must be borne in mind. The tendency throughout the disease is to hemorrhage; and this same tendency, that leads to the effusion of blood beneath the periosteum of the long bones, or into the tissues around the orbit, leads also to other manifestations, less frequent, but fully as significant when they do occur. Thus, the hemorrhage may take place into the muscles, causing circumscribed painful indurations; or beneath the skin, causing black and blue spots that look like bruises; or into mucous membranes, giving rise to epistaxis, or blood in the urine, stools or vomited matter. Hematuria may be the only symptom that attracts the notice of the mother and leads her to seek advice, as in a case reported by Cheadle.

Diagnosis.—The disease in question has been most often mistaken for rickets; in fact there are often symptoms of rickets present with those of scurvy, since both are caused by improper feeding. But no rickety child or any other will have scurvy, unless its blood lacks the antiscorbutic principle supplied by fresh food. Emaciation, anemia, fretfulness and irritability, and disinclination to be moved or handled are symptoms as much associated with one disease as the other; and with scurvy there may even coexist beading of the ends of the ribs, enlargement of the epiphyses at wrists and ankles, and the square-shaped head that are charateristic of rachitis. Yet rachitis does not give rise to swellings of the shafts of the long bones, or to spongy gums or to sub-

cutaneous or submucous hemorrhages. It should always be possible, therefore, on close examination, to distinguish between the two diseases.

The swelling and tenderness of a limb accompanying scurvy make one think of acute rheumatism; and histories are not lacking of cases treated for days with salicylate of sodium before a correct diagnosis was at last established. This mistake can arise only from superficial examination, overlooking other conditions of the infant than those present in the limb; and even if the swollen and tender limb were the only symptoms present, there would be lacking the redness of the surface and the elevation of temperature that accompany acute rheumatism.

The disinclination or positive inability to move the affected limb in scurvy has led to the mistake of diagnosing infantile paralysis. But besides the fact that in the scorbutic dyscrasia there are other manifestations besides the condition of the limb, the hyperesthesia of the member and the normal knee-jerk should exclude the diagnosis of infantile paralysis.

Finally, the swollen limb of scurvy has been mistaken for some distinctly local affection, such as periostitis, abscess of the hip or knee, or sarcoma. Dr. L. Emmet Holt, of New York, has reported a case of infantile scurvy, diagnosed as sarcoma by several surgeons, because of a large swelling about the knee; the autopsy showed no sarcoma, but very extensive hemorrhage and epiphyseal separation at the lower end of the femur.

The subcutaneous and submucous hemorrhages noted in scurvy occur also in several other affections, as hemophilia, leukemia, purpura hemorrhagica and erythema nodosum, all of which appear at times in infants and must be remembered in making a differential diagnosis.

In general, most of the failures to properly diagnose scurvy in infants have come from the lack of knowledge that such a disease exists. It has never been clearly brought out until the past ten years, that babies are subject to a distinct disease corresponding to the scurvy of adults. When this fact is more generally recognized by the profession, fewer mistakes in diagnosis will be made.

Prognosis. — The prospect is most brilliant when once the condition is recognized; for while scurvy left untreated is frequently a fatal disease, yet even in the worst cases the response to proper treatment is immediate. As Dr. W. P. Northrup says: "There are two things in a physician's work which may well call out the word 'miracle'; one is intubation and instant relief from suffocation, another is scurvy's cure."

Treatment.—The treatment is specific and yet it includes no drugs. It comprises two simple remedies: fresh cow's milk for food and fresh orange-juice. The stale food must be replaced by fresh-milk, modified or not with some diluent, according to the age and condition of the infant. The orange-juice can be given in teaspoonful to tablespoonful doses, three times a day. It is sometimes advisable to add to the diet fresh beef juice, prepared by heating thoroughly a piece of steak and then squeezing out its juice with a lemon-squeezer. No medicine is necessary. The swollen limb as a rule needs no treatment whatever; but if the condition has advanced to separation of epiphysis from diaphysis, the limb should be put up in splints to prevent deformity. The swelling of the gums usually subsides quickly under the administration of milk and orange-juice, but the bleeding from them may require some astringent application, such as the glycerite of tannin.

In conclusion, the following case is reported as typical of the disease in question, both in its clinical history and in its prompt response to treatment. It is also, so far as I can find from the literature on the subject, the first case to be reported from the Pacific Coast: Olive N., female, aged 10 months, was first brought to the Children's Clinic of Cooper Medical College on July 31, 1895. The mother had noticed enlargement of the right thigh; that the digestion was very poor; that the heart seemed to beat too rapidly; that the skin about the left eye had swelled on two occasions recently and turned darker colored, like a "black eye"; that the baby had nose-bleed once recently, and some bleeding of the gums. The enlargement of the thigh was first noticed about three weeks previous, and had gradually increased since. The discoloration about the eye was first noticed about July 17th, and the second occurrence about July 24th. The mother reported further that the baby's appetite was poor; that instead of sleeping, she whined and cried all night, but seemed easier in the daytime; that the discharges from the bowels were acid and very irritating to the buttocks, generally too frequent, and always fluid, and that the disposition was always peevish and fretful. There was a history of artificial feeding from birth. Many foods had been tried in succession, none seeming to digest well. Since November, 1894, malted milk had been used continuously, with a little better result. The mother prepared this

food by adding three teaspoonfuls of Horlick's malted milk to eight tablespoonfuls of water. The baby had just cut her first tooth at ten months, and had never yet made any attempt to stand on her feet. Both parents were living and well. There were three older children living, all well. One child had died of cerebral trouble, and had a history of bow-legs, straightened by operation at two years of age.

Physical examination showed that the infant was pale, poorly nourished, cachectic, the left eye protuberant; complexion fair, eyes blue, hair light, the body much emaciated. There was slight enlargement of the post-cervical glands, a marked rachitic rosary, box-shaped chest, and widely open anterior fontanel. Several small spots of ecchymosis were observed on the gum of the lower jaw on the left side. There was swelling of the right thigh from hip to knee, greatest about the middle, with slight enlargement also below the knee, in the upper third of the leg. The skin over the swelling was very tense, and no fluctuation could be made out. Some pitting of the subcutaneous tissues was observed on pressure. There was no redness of the surface or increased heat in the part, but the limb was apparently painful when handled. The infant made no effort to move the member. The greatest circumferenee of the right thigh was 9½ inches; of the left thigh, 7 inches. Percussion and auscultation showed heart and lungs normal.

The mother was instructed to drop the malted milk entirely, and feed the baby instead equal parts of cow's milk and oatmeal wateı. The cow's milk was to be allowed to stand for three or four hours, and only the cream and top milk used. The oatmeal water was to be made by boiling for one hour three teaspoonfuls of oatmeal in a quart of water. Of this mixture, four ounces were to be given every two hours. In addition, the baby was to receive one tablespoonful of fresh orange-juice three times a day.

August 3d.—The mother reported that the child had taken the food as directed, regularly and without difficulty. The appetite was much improved. The ecchymosis of the gums, and protrusion of the left eye had entirely disappeared. The swelling below the right knee was markedly diminished, but not noticeably above. The mother was instructed to make the proportions of the food two-thirds top-milk and one-third oatmeal water, and to increase the amount to five ounces at each feeding. The orange-juice was ordered continued.

August 7th.—The infant was reported suffering from constipation, and did not seem to take her food quite so readily as formerly. The interval between feeding was therefore increased to two and a half hours and more cream added to the food. One teaspoonful of fresh beef-juice was ordered with each feeding. If the bowels did not move daily, they were to be relieved by use of the soap-stick. The thigh at this visit was found to measure but 9 inches in circumference.

August 10th.—The baby was much improved, no longer constipated, and with good appetite. The limb was still further decreased in size, measuring only 8¼ inches. The food and orange juice were ordered continued as before, except that the beef-juice was to be given only with each alternate feeding.

August 14th.—Continued improvement in all respects was noted. The amount of food was increased to six ounces at each feeding and the interval to three hours. The beef-juice was dropped to one teaspoonful three times a day.

August 17th.—All the general conditions were noted as still improving, the appetite good, the bowels regular and passages well digested, the color better and a perceptible gain in flesh. The tumefaction of the thigh was still receding, and the greatest circumference measured but eight inches.

August 31st.—The infant could now move the affected limb quite freely, and apparently suffered no pain on motion or on handling of it. The greatest measurement was but 7¾ inches.

September 18th.—The limb was apparently the same size as the other, and the infant well in all respects and thriving. The orange-juice and beef-juice were discontinued entirely, and the food increased to seven ounces every three hours.

November 20th.—The infant was brought back to the clinic for an acute eczema, but with this exception was entirely well. It had none of the symptoms of scurvy, was rosy and well-nourished and in the best of spirits. Both thighs were the same in size, eaeh measuring just eight inches. The infant was beginning to stand on its feet, and gave every promise of soon learning to walk.

906 POLK ST.

DR. BAXTER T. SMELZER, secretary of the State Board of Health, has been investigating into the epidemic of typhoid fever at Elmira. He finds that the water of Chemung river, which is used in the city, is polluted by the sewage of Corning, Hornellsville, and Bath. Ice taken from the river at Elmira was found to be filled with bacteria.

THE AMBULATORY TREATMENT OF POTT'S DISEASE.

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POTT'S DISEASE is in itself only a tuberculous destruction of the anterior part of the bodies of the vertebræ. No deformity is necessarily attendant upon its occurrence, and the antero-posterior curvature of the spine, with which we always associate it, is really the result of the erect position. It is said that this deformity does not occur in quadrupeds.

The present paper is an attempt to formulate certain problems which are met in the treatment of this affection by ambulatory means. When a surgeon, in starting to treat a case of Pott's disease by ambulatory methods, selects the force of gravity as his antagonist, rather than as his assistant, it is proper that he should appreciate the problem which he is undertaking and understand clearly the mechanical aspect of the case. Instead of keeping the patient with Pott's disease in bed, if the surgeon allows him to go about, so that the heavy weight of the body comes upon the diseased segment of the vertebral column, the surgeon should know pretty definitely whether this is a matter that he can counteract by apparatus, or whether all mechanical support to the spine is not necessarily imperfect. The question is this: Can the spine be placed in as favorable a condition for recovery as during recumbency, and what is the mechanical value of the methods of ambulatory treatment now in use?

To consider, for example, a case of dorsal Pott's disease in a boy weighing forty pounds, where the disease is located in the lower dorsal vertebræ, say the ninth, tenth, and eleventh. It is manifest that, inasmuch as the vertebral column bears all the body weight, and as the vertebral column is normally convex backward in the dorsal region, the weight of the body above the disease must needs be transmitted through the bodies of the dorsal vertebræ. This weight is the weight of the segment of the body above the diseased vertebræ. It includes the head, with the brain, the neck and its firm muscles, the shoulder girdle, from which hang the arms, which are of no little weight, and the upper part of the chest, with the contained organs. There is no support in front. These organs are hung simply from the backbone, from which the chest girdle runs out just as a crossbar does from a telegraph pole. It is not a bad estimate, I think, to place the weight of these organs which I have just mentioned as half the body weight—in this case twenty pounds. We will assume, then, that the problem in this especial case is to modify, if possible, the pressure which comes from this weight upon the diseased vertebræ, and that this pressure is the result of a twenty-pound superincumbent weight.

The problem which efficient mechanical support must solve is to remove or lessen the weight coming upon the diseased bodies of the vertebræ. The antero-posterior brace attempts to do this by acting as a lever which shall transfer the weight to the articular and transverse processes by pushing against the deformity as a fulcrum. In other words, it should modify intervertebral pressure. It is upon this theory that the brace was constructed and should be used.

The model which is presented is a very imperfect affair, but one which makes very clear some of the intrinsic difficulties met with in the treatment of Pott's disease. This model was made as follows: A plaster jacket was applied to a patient and removed. After removal, the jacket was bandaged together and filled with plaster-of-paris paste, which hardened into a rough cast of the trunk. This cast was sawed in halves transversely, and by putting in some blocks of wood at the back to represent the vertebræ *H*—if these two halves are placed as shown in the picture, the conditions of a case of mid-dorsal Pott's disease—are fairly well represented (1). A Taylor back brace is applied by being bandaged to the lower segment and running up just as it would in the case of a patient. It is made to exert force at

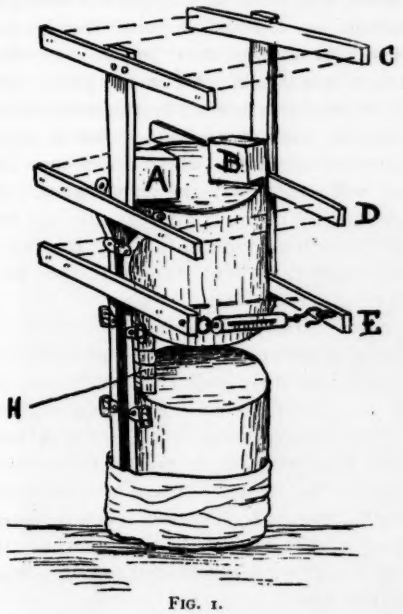

FIG. 1.

the point represented by the blocks of wood just as it would press forward upon the deformity. The upper part of the brace is bandaged to the top segment. These two segments of plaster represent the two segments of the body above and below the disease, and the problem is to determine what force must be applied by the brace to keep these segments in place. This would correspond to the force required to modify the intervertebral pressure, and this modification of the intervertebral pressure should be what the surgeon should strive to accomplish in all cases of Pott's disease treated by this brace.

The criticism may be made that this model does not reproduce the muscles. The only muscles which come in question are the intrinsic muscles of the spine, and those work to such a very great disadvantage in comparison with the leverage that the weight obtains, that they may be disregarded as of practically little importance. They could have been represented by rubber cords running along the back of this model, but it is evident that such apparatus would have very little practical influence upon the experiment. The posterior muscles of the trunk may tilt the body backward, as often happens, but this acts only to bring the superincumbent weight further back, and will be discussed later.

The upper part of this model weighs ten pounds, and a ten-pound weight is attached to it, which represents fairly well the conditions in a case of dorsal disease in a boy weighing forty pounds. An arm runs out from the back brace and other arms run out from the front of the upper part of the model. These are connected by spring balances, which show how much pressure is required at different levels. They show how much force will be required to hold the upper part of the model back.

Three things can be demonstrated by this model: (1) If the chest is firmly held, and the pelvis is held with equal firmness, the pressure coming upon the spine over the disease, in case the brace were used to modify intervertebral pressure, would be so great that no skin would be able to stand it. If the finger is placed between the back brace and the wooden blocks in the model which represent the diseased column, it will be found that even when the upper segment only weighs twenty pounds the pressure cannot be borne. It simply demonstrates the necessarily incomplete action of the brace, for if it were possible for the pelvis and chest to be held as firmly to the brace in the living subject as in this model, the skin would not be able to stand the pressure. It is obvious that the pelvis and chest cannot be held as firmly as in this model. (2) The position of the superincumbent weight is a most important matter. If the ten-pound weight is placed at *A*, that is as far back as possible, the spring balance at *D* registers ten pounds. If, however, the weight is placed at the forward part of the model, *B*, the balance registers nearly twenty pounds, demonstrating that the position of the superincumbent weight (that is, of the head and shoulders) is a most important matter in determining the amount of weight to come upon the diseased vertebræ. Therefore, if the head and shoulders are held as far back as possible in this way, it requires much less pressure to make the brace efficient than when the head and shoulders droop forward. (3) The level at which the backward pull is applied is a most important matter. In this experiment the spring balances are adjusted at the level of the axillæ, *D*, and the transverse pull is made practically at the level where would come the highest transverse straps of the apron. If the pull is made at a lower level in the model *E*, so great an amount of force is required to hold the upper part of the model in place that it cannot be registered by the balances in use. If the two arms are prolonged up to what would perhaps be the level of the middle of the face, *C*, much less force is required to hold the upper segment of the model in place than when pressure is made backward at the axillary line; that is, the higher the backward pressure is applied the less force is required to hold the upper part of the model in place.

This model is not presented as an accurate reproduction of the mechanical conditions in Pott's disease, but to demonstrate certain obvious facts.

The practical application of this experiment is as follows: In the living subject it is not possible to obtain a sufficiently firm hold upon the chest and pelvis. If it were, the skin over the deformity would not be able to stand the force required to modify intervertebral pressure. The Taylor back brace as ordinarily applied exerts no backward pull above the axillary line, where a very great force would be required to pull the upper segment of the body backward (Fig. 2). The chest piece of Dr. Taylor, which applies backward pressure in the fossæ under the clavicles, is in the right direction. The apparatus of Dr. Whitman (Fig. 3), which makes pressure upon the anterior part of the shoulders, is also in the right direction, but incomplete and incapable of exerting proper pressure. If a firm hold could be obtained upon the chest, a brace would be able to accomplish much more

than is found to be the case now. The chest piece used by the writer, which is practically an anterior brace to the chest, is shown in the diagram. It is an effort in the direction of obtaining this hold upon the chest, and is partly satisfactory.

FIG. 2.

With regard to the mechanical efficiency of the plaster-of-paris jacket in Pott's disease, a different method of experiment was undertaken. If the plaster jacket diminishes the deformity, or extends the spine when applied, it must necessarily cause lengthening of the body. If the plaster jacket can accomplish as much, or nearly as much as is done by having the child lie on its back, the length of the child should be as much after the application of the plaster jacket, as when lying down. Some preliminary experiments were made with regard to the effect of recumbency in increasing the length of children with Pott's disease. (1) A boy with lumbar deformity was one-quarter of an inch longer when lying down. (2) A girl with dorsal deformity was one-half of an inch longer when lying down. (3) A girl with lumbar deformity was one-quarter of an inch longer when lying down. (4) A girl with acute dorsal disease was seven-eighths of an inch longer when lying down. (5) A girl with high dorsal disease was seven-eighths of an inch longer when lying down.

These experiments show that a child with Pott's disease is from one-quarter to seven-eighths of an inch longer in recumbency than in standing. This difference can be accounted for by the change in the curves of the spine.

An experiment was then undertaken to see if the plaster jacket caused lengthening of the child, and if so, under what circumstances. (1) Jacket applied by suspension. The immediate effect was an increase in the length of the child five-eighths of an inch over the standing position, but at the end of twenty minutes the child had shortened three-eighths of an inch, and at the end of thirty minutes was back to one-eighth of an inch of the height when standing with no apparatus. In other words, the application of a plaster jacket lengthened the child only one-eighth of an inch. It may be mentioned incidentally that the child when lying on its back was one-half of an inch longer than when it was standing up with a properly applied plaster jacket. (2) A jacket was applied to a child, with the effect of immediately lengthening it over the standing position. At the end of twenty minutes, the child was at the same height as when standing without the jacket on, and was seven-eighths of an inch shorter than when lying on the back in bed. The jacket was

FIG. 3.

applied by suspension. (3) A jacket was applied by the hammock method: Standing without support, 3 feet 2¾ inches; ten minutes after application of jacket, 3 feet 2¾ inches; twenty minutes after application of jacket, 3 feet 2½ inches. (4) Jacket applied by the hammock: Standing with-

out jacket, height 3 feet $4\frac{5}{8}$ inches; immediately after application of jacket, 3 feet $4\frac{3}{4}$ inches; ten minutes after application of jacket, 3 feet $4\frac{5}{8}$ inches.

In no one of the four experiments was the child substantially longer after the careful application of the jacket than when standing unsupported, and in no case as long as when lying down without apparatus. The column is longest and the spine consequently straightest when the child is suspended or has traction applied in bed to the legs and head. A boy with mid-dorsal disease, not very acute, was an inch longer in bed with traction than when he stood up. A girl with high dorsal disease and paralysis was lengthened three-eighths of an inch by traction over her length when lying quietly in bed. The spine is in its second best position when the child lies in bed without traction. The spine is shortest, and consequently in its worst position when standing, and the application of a jacket has not, in any case observed by the writer, been found to produce any permanent increase in height, except in one case where it lengthened the child one-eighth of an inch over the position without a jacket. The same may be said of the application of the antero-posterior brace. Recumbency, on the other hand, does produce such an increase in length. To the writer's mind, the case is clear. Recumbency with traction is the best available treatment if we regard only the position of the spine. Simple recumbency is the next best. Treatment by ambulatory measures is the worst. These are demonstrated by the length of the child under these various conditions.

Recumbency: With regard to the treatment by recumbency I am as far as any one from wishing to advocate unnecessary recumbency, but I wish to go on record as advocating, in general, during the acute stage of Pott's disease, recumbency on a frame for the greater part of the time, varied by short periods of going about protected by the most available brace or jacket. During the painful stage I believe that recumbency should be continuous. The beneficial effect of recumbency must be familiar to every orthopedic surgeon, who must often notice the improved appetite, the increase in flesh, and the diminished fever, when a child with acute Pott's disease is put to bed.

In the use of apparatus it should be remembered that it is all necessarily imperfect from a mechanical point of view, and does not afford complete support, and that traumatism to the spine must result from the use of the jacket or the brace. The more complete and efficient the apparatus, the less the traumatism.

Such are the scattered facts that I have brought together for your attention. Pott's disease, it seems to me, is a very grave affection, and in advocating its treatment by recumbency, rather than by ambulatory measures, during the acute stage, I am speaking of what I believe to be the very best treatment. Other modes of treatment are no doubt excellent, but when one wishes to secure the very best result, it seems to me that, having recognized that apparatus is intrinsically imperfect, and necessarily so, to accomplish the purpose for which it is intended, it is incumbent upon the surgeon either to insist upon this treatment by recumbency or to transfer the responsibility of ambulatory treatment to the parents. The use of apparatus, it seems to me, should be during the acute stage, to vary the monotony of recumbency. That recumbency should be carried out by having the child lie upon its back upon a frame. The addition of traction to the legs and head I believe to be of benefit, and that it hastens recovery by quieting muscular spasm and improving the position of the spine. I believe that it should be used in all cases of paralysis due to Pott's disease.

With regard to apparatus, whether we use it in the way that I have advocated or as the sole means of treatment, it seems to me that we should remember that apparatus is necessarily mechanically inefficient to solve the problem which it undertakes. If apparatus is used these points should be remembered: the position of the superincumbent weight should be as far back as possible; and the higher the backward pull comes, whether a jacket or a brace is used, the less force is required.

Whether we wish to follow the best treatment or not may be a question, but it is the writer's belief that treatment by recumbency, so prevalent in the early days of orthopedic surgery, will come again to the front if the real value of supporting apparatus is studied.

THE DIAGNOSIS OF GASTRIC CARCINOMA.[1]

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CARCINOMA of the stomach usually occurs after the age of 35, although it may occur before; indeed, it has been recorded in infancy. Heredity is not as important a factor in diagnosis as was formerly taught. In some parts of the coun-

[1] Read before the Surgical Section of the Buffalo Academy of Medicine, January 7, 1896.

try carcinoma is more commonly seen than in others, and Roswell Park has remarked upon the frequency of its occurrence in the vicinity of western New York. Sex does not seem to have much influence upon the frequency of carcinoma.

The history of the illness should be carefully considered, for it is difficult to determine just when the disease commences, the early symptoms depending in a measure upon the location of the neoplasm. If it arises at the cardia, symptoms pointing toward obstruction at that point may develop very gradually. Some trouble in swallowing may be experienced. A few mouthfuls of food are swallowed and then the patient feels a vague distress beneath the sternum which is accompanied or followed by regurgitation of food. Pain may be present, but is not constant as is ordinarily supposed. In case the fundus of the stomach is the seat of an extensive infiltration which gradually leads to thickening and contraction, the early symptoms may consist of distress after eating, amounting in some cases to severe pain; or nausea and vomiting may occur after small quantities of food have been eaten; the capacity of the stomach in these cases steadily diminishes, and a few ounces of food serve to tax it quite fully. The symptoms and physical signs of carcinoma in this location differ markedly from those of carcinoma of the pylorus. The diagnosis in some instances is very difficult, as there may be no symptoms referable to the stomach. In those cases having the disease situated at the pylorus the early events usually indicate ischiochymia. Constipation is noticed, and at long intervals copious vomiting occurs. Food stagnation manifests itself by the appearance of substances in the vomitus that were eaten one or more days before. Marked gastric discomfort or actual pain, accompanied by nausea, usually preceeds these vomiting spells, and immediate relief is experienced as soon as some of the stomach contents are expelled. As a rule only a portion of the contents is vomited, it being a rare occurrence for the stomach to be thoroughly emptied in this condition by the act of vomiting.

At first these attacks happen only once in one or more months, but they occur more frequently as time passes and the pyloric stenosis increases, until finally food is rejected after every meal, perhaps, or vomiting occurs regardless of eating.

The time elapsing between the earliest and the latest manifestations of malignant disease of the stomach depends somewhat upon its location. When it is situated so as to interfere with the onward passage of food from the esophagus through the stomach and into the duodenum, loss of flesh and strength makes rapid strides, and a few months may suffice for the appearance of great emaciation and profound debility. This is true because the intestine does not receive the food, and the body is deprived of the manifest advantages of intestinal digestion; the consequent inanition is practically the result of starvation.

In cases with diffuse carcinoma of the fundus, diminishing the capacity of the stomach, but not offering any obstruction to the entrance of food into the intestine, loss of weight may be very gradual, and a fair amount of strength is maintained for a considerable period. The natural resisting power of the patient is an important factor in determining the length of time he will live, as is also the existence or absence of malignant disease of organs apart from the stomach.

The cachexia is not characteristic; it is not different from that occurring in other exhausting affections, nor is it an invariable occurrence. It may appear early and be very marked, but, on the other hand, it may not be noticeable until very late in the disease. All the symptoms are usually progressive.

Among the symptoms mentioned above will be those accompanying the general debility, such as weak pulse, pallor, dry, harsh skin, hyperlithuria, periodic albuminuria, or indicanuria. Sometimes a few hyaline casts are found in the urine. The urea excretion is low, but no more so than is the result of starvation, emaciation, and lowered vitality. The skin may assume an icteric hue, owing, perhaps, in some instances, to blood changes as well as to slight biliary obstruction. Most commonly, however, hepatic jaundice results when the disease involves, by extension, the biliary passages or embarrasses them by pressure.

Examination of the blood shows early a chlorosis, and later the red blood-corpuscles are reduced. Sometimes the red cells fall as low as 1,000,000 per cubic millimeter, and many megalocytes, microcytes, and macrocytes are seen. Normoblasts are also present in some cases. No leucocytosis is observed unless inflammation or ulceration takes place.

By physical examination it is not always possible to detect tumors involving the stomach. The cardia may be seriously affected and no tumor be discernible—the fundus may be thoroughly infiltrated, and yet no tumor palpable; while at the pylorus it is not difficult to discover induration if the disease has progressed far enough and the liver does not overlap the growth. In the presence of very thick or rigid abdominal

walls its detection may be rendered difficult and somewhat uncertain.

Gastrectasia almost invariably occurs and will be discovered by the physical signs of that condition. When gastrectasia results from pyloric obstruction, the steps in the process are analogous to those observed in dilatation of the heart from obstructive disease; in other words, there occurs first excessive demand upon the muscular tissue of the organ, which hypertrophies in compensation; later this compensation fails and true dilatation follows. Sometimes it is possible to make out enlarged lymphatics in the retroperitoneal tissues or in the mesentery; or the left supraclavicular gland may be enlarged.

On the whole, the discovery of a manifest pyloric tumor with gastrectasia, together with the stomach symptoms before mentioned and the general manifestations of the local disease, strengthens one's belief in the existence of carcinoma ventriculi, but an unequivocal diagnosis should not be made without the very valuable and confirmatory evidence obtained by the direct examination. In some cases very valuable information may be elicited by the simple passage of the tube; for instance, in case of carcinoma of the cardia, the tube may meet with an obstruction about fourteen inches from the teeth, and, if esophageal dilatation exists, contents lodged above the cardia may be withdrawn and examined. No hydrochloric acid will be found; there may or may not be lactic acid; no biuret reaction will be obtained unless predigested albuminoid food has been eaten; the acidity will be very low, if present at all. Or it may be found that the tube withdraws the solids best when introduced an unusually long distance, say 28 or 30 inches from the teeth, indicating extensive dilatation of the stomach.

Gastrorrhagia may take place and a large amount of blood be vomited, but this is a rare occurrence. Disorganized blood may be present in the contents, often resembling "coffee-grounds." Red blood-cells may be entirely disintegrated, but the test for hemin crystals may be positive. Fragments from the surface of the carcinoma may be discovered, and cell-nests revealed by the microscope. Usually considerable thick, tenacious mucus is present. Sarcinæ are not so frequently found as in benign pyloric stenosis with gastrectasia. A very large amount of foul-smelling, dark, stagnant contents may be withdrawn, containing remnants of food eaten days before. Such contents almost always indicate pyloric stenosis, and would not be expected in a case of malignant disease of the fundus. Acidity is usually very high; in many cases it reaches 120, requiring 12 c.c. of decinormal sodium-hydrate solution to neutralize 10 c.c. of stomach contents. The acidity depends in most cases upon organic and combined acids, lactic acid being present in unusual quantities.

Hydrochloric acid is absent as a rule, but a few cases have been observed in which it was present until late in the disease. The absence of hydrochloric acid has long been known to be of slight significance as an evidence of gastric carcinoma, but the presence of hydrochloric acid was considered highly conclusive evidence that no malignant disease existed. Unfortunately, this diagnostic prop has been taken away by the indisputable cases in which hydrochloric acid has been present. A case which I observed, and repeatedly examined, was reported by Dr. Charles G. Stockton,[1] in which hydrochloric acid was found with a large visible and easily palpable pyloric carcinoma. Dr. Park performed gastro-enterostomy upon this case.

The chief interest now lies in the question of the presence of lactic acid and lactic-acid-forming micro-organisms in the stomach contents of carcinoma ventriculi.

Lactic acid must be considered under two distinct headings: First, its occurrence under normal and various morbid conditions on ordinary diet, or when introduced preformed into the stomach; second, its formation in the stomach after food absolutely free from lactic acid has been eaten.

In 1892 Martius and Luttke showed that lactic acid was not a normal constituent of the gastric contents. Prior to that time the dictum of Ewald and Boas, that lactic acid was present in the normal stomach for about thirty or forty minutes after Ewald's test-breakfast of a roll and water, was accepted. Boas investigated the subject thoroughly, and in 1893 announced that the confusion arose because all products of the bakery contained an appreciable amount of lactic acid. Boas was dissatisfied with Uffelmann's test, and he devised a new and elaborate method for the detection of lactic acid. This method is based upon the fact that manganese dioxide and sulphuric acid decompose lactic acid, forming acetic aldehyd and formic acid. Boas' test conducted as a qualitative examination is as follows: The gastric contents are filtered, and 10 c.c. of the filtrate are tested for the presence of free

[1] New York State Medical Association meeting, October 15, 16, 17, 1895.

acids by Congo red; if free acids are present, an excess of barium carbonate is added. The contents are then evaporated in a porcelain capsule over a water-bath, to the consistence of syrup. The carbon dioxide is driven off by boiling with a few drops of phosphoric acid. The further directions are, cool and treat two or three times with 50 c.c. of ether that is absolutely free from alcohol; digest with the ether half an hour, evaporate, and dissolve the residue in 45 c.c. of water; put this into a flask and add 5 c.c. of sulphuric acid and a small quantity of manganese dioxide. A bent glass tube connects this flask with a mixture of equal parts of one-tenth normal iodine solution and one-tenth normal sodium-hydrate solution, making an alkaline iodine solution. The flask is now carefully heated, and as soon as boiling occurs the iodine solution becomes slightly smoky and the odor of iodoform is detected if lactic acid is present.

Boas devised a test-meal, consisting of a tablespoonful of oatmeal flour to a litre of water, which may or may not be flavored with a little salt. The stomach to be examined is washed out thoroughly at night and the test meal given. The contents are withdrawn in the morning and examined for lactic acid after the manner described. Boas found by this method that lactic acid was never present at any stage of normal digestion, nor was it present in any abnormal condition of the stomach excepting carcinoma, in which disease it is almost invariably present in large quantities. Cases of cancer may exist in which no lactic acid is found. On ordinary diet lactic acid is usually present in larger quantities than are found after the flour-soup test-meal.

In an admirable review of Boas' work D. D. Stewart[1] points out the absolute importance of eliminating from consideration all test-meals in which lactic acid exists preformed. Dr. Stewart emphasizes the particular necessity for exact technique, and says his experience accords entirely with that of Boas. Stewart also speaks of the unreliable nature of Uffelmann's test.

In a series of articles upon "The Early Diagnosis of Carcinoma of the Stomach, with the Bacteriology of the Stomach Contents,"[2] Fenton B. Turck says he finds that lactic-acid-forming micro-organisms are present in abundance in the stomach when carcinoma exists. In no other affection are they so numerous.

In an excellent article, entitled "The Significance of the Presence of Lactic Acid in the Stomach,"[1] Julius Friedenwald carefully reviews Boas' work and gives the results of his investigations. In twenty-nine examinations made, in eight normal cases using the Boas technique in detail, no lactic acid was found. In four cases of superacidity, none was found. In twelve examinations upon eight cases of atony, in but one was any lactic acid found, and then only the faintest trace, that might be accounted for by swallowing lactic acid from the mouth. In two cases of non-malignant dilatation, in one of which hydrochloric acid was continually absent, no lactic acid was present. Twelve examinations in eight cases of chronic gastritis, with hydrochloric acid absent in all, resulted in finding no lactic acid, except in mere traces in one case (probably swallowed). Four cases of secondary gastric catarrh, with hydrochloric acid absent, had no lactic acid. In four cases of gastric carcinoma, with an absence of hydrochloric acid, lactic acid was found in all and at every examination. Friedenwald therefore confirms Boas' statements.

Besides the germs that form lactic acid in culture media, one other, called the faden bacillus,[2] has been found. This is a long, delicate, thread-like bacillus found in the stomach in carcinoma, and in no other disease, which has never yet been cultivated. Its presence is highly diagnostic of carcinoma. Kaufmann first found it in the gastric contents; Boas describes it in the 1895 edition of his work on "Diseases of the Stomach." Julius Ullmann found it in one of our cases without palpable tumor or perceptible dilatation, but with lactic acid present and some food stagnation. There are cases in which hydrochloric acid is present; and in some of these, even though dilatation and food stagnation occur, lactic acid is not found. Such a case was the one before mentioned, which was reported by Dr. Stockton. In this case lactic appeared as soon as free hydrochloric acid disappeared, and it persisted thereafter.

In a few cases Boas' method has given me valuable assistance in excluding carcinoma, and in a few cases I have been, by its assistance, better able to make a provisional diagnosis early and while yet no tumor was palpable. Max Einhorn says[3] Boas' lactic-acid test is of great value, but there are cases in which the constant appear-

[1] MEDICAL NEWS, Feb. 16, 1895.
[2] *Journal of Am. Med. Association*, March 2, 9, 16, and 23, 1895.

[1] *New York Medical Journal*, March 23, 1895.
[2] Wilhelm Schlesinger and Rudolph Kaufmann: "Ueber Einen Milchsaure bildenden bacillus and Sein vorkammen in Magensafte:" *Wien. klinische Rundschau*, Jarg. 9-95, No.15, 5, 225-227. 227.
[3] "Diagnosis and Treatment of Stenosis of the Pylorus:" *Medical Record*, Jan. 19, 1895.

ance of lactic acid is observed, and still no cancer exists, also cases of carcinoma without lactic acid. Einhorn cites a case of each kind.

Under normal conditions the rennet-ferment may be present in dilutions up to $\frac{1}{400}$, and the rennet-zymogen up to $\frac{1}{1600}$. In diseases of the stomach attended by little or no organic change the zymogen may be present up to $\frac{1}{600}$ to $\frac{1}{1600}$, although with an absence of hydrochloric acid the ferment may be reduced $\frac{1}{16}$ to $\frac{1}{8}$. In chronic gastritis and carcinoma the ferment may be entirely absent, while the zymogen is markedly diminished; in the former disease as low as $\frac{1}{8}$, in the latter $\frac{1}{400}$ to $\frac{1}{16}$, or lower according to the extent of the disease. Therefore, the amount of zymogen present affords some information as to the existence of organic disease. J. Friedenwald[1] has studied the matter carefully, and the above figures are taken from his findings.

The gastrodiaphane, devised by Max Einhorn, assists the inventor in diagnosticating malignant disease of the stomach. In cases where the growth thickens the anterior wall, its transparency is diminished and a dim light is seen in that situation, whereas over other parts of the illuminated stomach the light is transmitted with intensity. Dilatation of the organ is certainly made out and that is an important fact. I have used the instrument occasionally during a period covering about three years, and consider it a very valuable addition to our armamentarium.

It is to be hoped that in the future we may be able to make an early diagnosis, before any tumor or dilatation is manifest, so that surgical intervention may reap better results and lives may be greatly prolonged or saved.

436 FRANKLIN ST.

CLINICAL MEMORANDA.

A CASE OF TRAUMATIC OPHTHALMOPLEGIA.[2]

BY DAVID WEBSTER, M.D.,
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ON the 17th of November, 1895, Edward F. McC., aged 6, while walking with a slate-pencil in his hand, stumbled and fell on a board sidewalk. He was picked up in a semi-unconscious state and taken home. Dr. Edward L. Bull was called to see him soon after the accident, and found ptosis, with total ophthalmoplegia of the right eye. There was a punctured wound beneath the right orbital edge, at about the junction of its middle and inner thirds. Besides this wound of the upper part of the eyelid, which was still bleeding, there was a slight bruise or mark on the brow, as though it had struck upon the pencil lengthwise. Dr. Bull examined the parts carefully, but could find no foreign body. On testing the vision of that eye, the boy counted fingers and recognized a watch, but it is now doubtful if he saw the fingers with the *injured* eye, and the loss of sight may have been immediate. It is certain he had no perception of light in the eye a few days later. He looked pale and felt sick, and vomited from time to time for forty-eight hours after the accident. He then recovered his usual health and went about his play as usual, and has been well, so far as his general health is concerned, ever since. Dr. Bull sent him to me a few days after the accident. I found total blindness of the right eye, with absolute ophthalmoplegia and ptosis. The third, fourth, sixth, and optic nerves were totally paralyzed. Ophthalmoscopic examination showed nothing abnormal in the media or in the fundus. It was thought there was slight exophthalmus at first, but I was not sure there was any when I saw him. He has had no pain in or about the eye at any time since the injury, and there have been no indications for treatment.

When I saw him on January 8, 1896, there had developed a slight paleness of the right optic disk. He had also recovered the power to raise his right upper lid a very little; otherwise, the *status* remained unchanged. There is now not only well-marked atrophy of the optic disk, but a neuro-paralytic keratitis has developed itself. The eyeball is slightly red and the cornea is hazy and anesthetic.

The problem in this case is as to the *nature of the injury*. It seems to me most probable that the slate-pencil entered the orbit, injured the lenticular ganglion, and fractured the walls of the orbit at or near its apex. The pencil may still be partly in the orbit and partly in the cranial cavity. I presume the same symptoms could have been brought about by fracture of the orbital walls from the force of the blow of the brow upon the board sidewalk, and possibly even by shock or concussion; but the punctured wound seems to indicate that a portion of the slate-pencil is embedded somewhere in the orbital tissues so deeply as not to be felt with the finger.

[1] THE MEDICAL NEWS, June 22, 1895.

[2] Reported to the Section on Ophthalmology of the New York Academy of Medicine, Jan. 20, 1896.

CASES ILLUSTRATING VARIOUS PATHOLOGICAL STAGES IN INFLAMMATORY PELVIC DISEASE.[1]

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THE cases I report illustrate very well the different conditions we find in inflammatory pelvic affections as a result of tubal diseases. The first of this series was operated upon to-day, the patient being a girl aged 18 years, having the following history:

Two months ago when I first saw the patient she had had an abortion resulting in incomplete expulsion of the membranes, followed by fever, a great deal of abdominal tenderness, and metrorrhagia. Her menstruation up to

[1] Reported to the Louisville Clinical Society.

that time had been perfectly regular, with the exception of about ten months ago, at which time she missed one period, which was followed by severe flooding, probably also an abortion. However, there was never any pain, either preceding, during, or after the menstrual epoch. Her menstruation was normal. She denied ever having been pregnant, but the evidence was unmistakable. She could not account for her flooding, nor could she account for the absence of menstruation for two months preceding the time at which I saw her.

Examination revealed an abdomen moderately distended, rather tender to pressure, which tenderness was exquisite over the ovarian regions. There was considerable bleeding, consisting largely of clots. Bimanual examination showed the uterus to be enlarged, tender, and more or less fixed in a slightly retroverted position. The ovaries were very tender; the tubes feeling somewhat hard were very easily mapped out, much more so than common, and there seemed to be no adhesions. She had some elevation of temperature.

I curetted her thoroughly, gave an intra-uterine douche of bichloride solution, and introduced a uterine drain of gauze, which was removed after forty-eight hours. This was followed by douching with plain hot water; she had been thoroughly purged; the distension disappeared, but there remained considerable tenderness about the abdomen.

She convalesced fairly well, and in several days was out of bed. I saw no more of her until three or four days ago. She told me then that since she had been up she had never felt perfectly well, though for a short while she had not much trouble, still with the advent of her menstruation again her trouble had been worse. She had constantly severe abdominal pains, which at the time of her menstruation were almost unbearable. She had been compelled to remain in bed on account of the severity of this pain. She had taken morphia at intervals, could hardly go about, had begun to lose flesh, had lost appetite completely, and presented in other words those symptoms which we find so characteristic in inflammatory pelvic trouble.

I examined her very carefully, finding the uterus retroverted, not freely movable, ovaries and tubes very tender and fixed in adhesions. The tubes, I thought, were somewhat enlarged. I advised waiting awhile, but she insisted that something should be done for her.

To-day I operated by the abdominal route. I found the uterus adherent, as I had suspected, these adhesions consisting of long bands not dense in character, such as we find in chronic inflammatory trouble, but easy of separation. They were separated very carefully. The tubes and ovaries were embedded in adhesions, the intestines being adherent over them upon the right side. After some careful manipulation these were separated. Upon the left side the ovary and tube were also adherent, the fimbriated end of the tube passing out from these adhesions and being attached to a coil of intestine almost on a level with the umbilicus. She had had considerable pain at this point. The ovaries were not enlarged; one of them presented a hemorrhagic cyst, possibly a ruptured Graafian follicle, but the disease was not at all sufficient to justify their removal. The same may be said of the tubes, which, though embedded in these adhesions and showing that they had been the source of infective peritonitis, did not contain any pus. There was a small amount of serum in each tube. The tubes were milked toward the uterine end, then toward the distal end, this secretion being carefully sponged out. The fimbriae were all separated, the tubes and ovaries being allowed to fall back into the cavity, the omentum being packed down around the intestines, separating them completely from the pelvic cavity. The abdomen was then closed with silkworm-gut in the usual manner. I expect the patient to get well without the least trouble.

CASE 2.—The second case was operated upon about two weeks ago. Her history is somewhat similar to the preceding one, in detail being as follows:

The patient, S. R., aged 25 years, was referred to me a month ago by Dr. Sieffert for a left pyosalpinx. Four years ago she had had an abortion; though previously always in excellent health, had since had trouble with each menstrual epoch, and of late during the interval between her menstrual periods. This trouble consisted of bleeding, with pain during and also preceding the flow. Lately she had had metrorrhagia. She had never been pregnant except on this one occasion four years ago. There was constant pain in the back and hips, also servere abdominal pain, and she was compelled to remain most of the time in bed.

A careful examination under chloroform revealed an enlarged ovary upon the right side with considerable thickening about the tube; on the left side a great deal of induration and thickening, but no distinct tumor mass could be made out. The uterus was enlarged and not perfectly movable, and there was a purulent discharge from the cervix. She being very anxious to have children, and thinking that she might possibly be benefited, at least to some extent, with something less than an abdominal section, curetting was advised and carried out, from which she recovered without any trouble whatsoever. There was no improvement in her symptoms, and at the first menstrual period after the curetting all symptoms were, if anything, increased in character. She at last consented to a celiotomy, and upon section there was found an adherent uterus with adhesions of the ovaries and tubes to surrounding structures. Both ovaries were enlarged, the right much more than the left. The tubes showed that condition known as hydrosalpinx, the one upon the left side being about as large in diameter as the index-finger, the one on the right side possibly the diameter of the little finger. The adnexa of both sides were removed; the abdomen sponged out thoroughly and closed in the usual manner.

She had for the first week no trouble whatever, but after removal of the stitches she began to complain considerably, and an examination of the abdomen showed formation of stitch abscesses. These were opened and thoroughly washed out, and treated as we usually treat such abscesses.

CASE 3.—The third case was operated upon five

weeks ago. The patient, aged 30 years, was referred to me by Dr. Dunn. Her history is that she had been in perfect health until a week before I saw her, when she was seized with sudden pain in the abdomen, so severe that she was at once compelled to take to her bed. A rapid swelling appeared; she became unconscious, and was resuscitated by some of her friends. About the same time she began to menstruate. Dr. Dunn did not see her until two days after the symptoms which I have just cited. He found a large tumor completely filling the pelvis and bulging into the vagina.

When I saw the patient she was having some fever, a very rapid pulse, abdomen very much distended, obstinate constipation, menstruation still going on, though scanty. A positive diagnosis was very difficult to make on account of the meagre history which was obtainable. Dr. Dunn and I, after a thorough examination, finding this large tumor completely filling the pelvis above and bulging into the vagina to such an extent that the index-finger could hardly go by it, concluded that our patient had one or two things—either she had an extra-uterine pregnancy which had ruptured into the broad ligament, or she had an old pelvic peritonitis, which had been relighted by leakage from the pyosalpinx into the peritoneum. Though the patient's history pointed more to an extra-uterine pregnancy, still her condition, character of the tumor, and the absence of all signs of pregnancy inclined us rather to the latter opinion.

She was sent to the Infirmary with a temperature of 101° F. and a pulse of 124. Operation revealed upon both sides immense tubo-ovarian abscesses, which were simply enormous, and upon one side extended down into the pouch of Douglas, forming the mass which we had felt in the vagina. This mass did not have a fluctuating feel. This was due to the great amount of inflammatory deposit around the tumor. The tumors completely surrounded the uterus above, in front, and below, and it was necessary to separate them very carefully to prevent injury to the bladder and intestines. After separating the numerous and dense intestinal adhesions above, the tumor on one side was removed, though in doing so it was ruptured, allowing fully a quart of pus to flow out, a large portion of which escaped into the abdominal cavity. In like manner, in removing the tumor from the other side, pus escaped into the cavity, though this was not due to rupture in the removal of the tumor, but to one which had existed before removal of the tumor, as shown by an abscess sac formed of the tumor upon one side and of the parietal peritoneum upon the other. All in all, more than two quarts of pus escaped. The abdominal cavity was thoroughly washed out with sterilized water, a drainage-tube was inserted, and the patient put to bed. For several days she was in a precarious condition; however, as her bowels began and continued to move freely, and we persisted in the use of stimulants, we had the pleasure of seeing her pulse gradually decrease and distension disappear, until now she has gone on to a good recovery, there remaining, however, a fistulous tract at the site of the drainage-tube. This fistula will probably remain until finally the ligatures, which were put upon the ligaments on one or both sides, and which have no doubt become infected, suppurate and come away.

These three cases illustrate very beautifully the several steps in one of the commoner inflammatory pelvic troubles. The first case, if it had been left alone, would have gone on to, first, hydrosalpinx, then pyosalpinx, later possibly tubo-ovarian abscesses, such as in the last case reported. Case 1 shows what can be done by early operation—extensive and dangerous adhesions may be prevented, as may also the formation of pus with its attendant dangers, and our patients undoubtedly have a far better chance of recovery than in those cases that are "tinkered" and allowed to go on until they have reached the condition in which the last patient was found. The first case was the simplest of the three. The second case, which shows the next step in the development of pus-tubes, was much more simple and much easier for the operator, and the outlook better for the patient, than the last case; at the some time the adhesions were dense, and infection had evidently been more severe and longer continued than in case 1. The earlier we can get these cases the better it is for both the patient and the operator.

I have no doubt, as before stated, that the first case will be completely cured. It belongs rather to what we may call true conservative surgery. In such cases conservative surgery does not consist in deferring operation, but in exploratory incision, with freeing of adhesions when present, and non-removal of the appendages unless positive evidence of disease of these organs is present. It often requires more courage to return the ovaries than to remove them after the abdomen has been opened.

NOTE.—These cases have all made complete recoveries. Case 1 is relieved in every respect; she has absolutely no pain; the stitches were removed on the seventh day; the incision had united throughout with as near an approach to union by first intention as it is possible to obtain; there was never the least pus, not even a drop of serum from a stitch-hole. She has menstruated since the operation, menstruation being as free from pain as before her abortion.

NEW APPARATUS.

A BIPOLAR STOMACH ELECTRODE (INTRA-GASTRIC).

BY FENTON B. TURCK, M.D.,
OF CHICAGO.

THE gyromele[1] has been used for some time as an electrode within the stomach, and is of special value, as all parts of the stomach can be reached. The other electrope is applied externally. Any value found in the use of intrafaradization or intragalvanization has the additional advantage of the mechanical effects of the gyromele, the massage, and vibratory effect produced by the revolutions of the instrument.

I have devised a bipolar electrode, so that both poles

[1] This was first reported at the International Medical Congress at Rome, 1894; later reported in the *Wiener med. Wochenschrift*, Nos. 1 and 2, 1895: "*Eine neue Methode der Diagnose und Therapie gewisser Magenkrankheiten.*"

can be used within the stomach, with a single gyromele. It is not necessary to use an external electrode upon the abdomen, although it may be used if so desired.

The cable in the gyromele acts as one of the poles; a second wire concealed in the wall of the stomach-tube that ensheaths the gyromele acts as a second pole. At a distance of about two inches from the upper and five inches from the lower distal extremity of the stomach-tube, this is encircled by a narrow metal band. Each band is pierced by the wire that passes within the tube-wall. At the point of entrance of the wire there is a small projection, for the attachment of the wire that leads to the battery. The metal band, which is about five

THE GYROMELE.

inches from the other end (distal), is covered by a sponge. By drawing the gyromele back and forth, with both poles connected with the battery, all parts of the stomach, from the esophageal opening to the pylorus, can be reached.

A POTATO-CUTTER FOR BACTERIOLOGICAL LABORATORIES.

BY MAZYCK P. RAVENEL, M.D.,
OF PRINCETON, N. J.,
DIRECTOR OF THE LABORATORY OF HYGIENE, PRINCETON, N. J.

THE method of Bolton for preparing potato as a culture medium for bacteria has been very generally adopted, largely to the exclusion of older methods.

The accompanying cut, which requires no explanation to be understood, illustrates a simple device for facilitating the prepartion of the plugs. A single throw of the cutter

removes a cylinder of the potato, and at the same time divides it into two equal parts, giving a smooth, flat surface for culture. The size of the instrument has been adjusted for the commonly used tube of three-fourths inch inside diameter.

It has been made for me in the most satisfactory manner by Messrs. Chas. Lentz & Sons, of No. 18 North Eleventh street, Philadelphia, Pa., from whom it may be obtained.

MEDICAL PROGRESS.

Repeated Left Hemiplegia in Infancy and Old Age.—LANNOIS and PAULY (*Lyons médical*, 1895, No. 51, p. 562) have reported the case of a man dead of pulmonary tuberculosis at the age of 66 years, who suffered some cerebral disorder at the age of 18 months or two years, followed by left hemiplegia. At the age of 16 years he began to have epileptiform convulsions, which involved primarily the left side, and continued at long intervals until between the ages of 40 and 45. When 55 years old the patient was again seized with left hemiplegia, followed by contractures. Upon post-mortem examination, the right cerebral hemisphere presented a large loss of substance, involving the convolutions adjacent to the fissure of Sylvius, the adjacent convolutions being reduced in size. The cavity formed was occupied by fluid and communicated with the lateral ventricle, but no trace of thrombosis or embolism could be detected. The right cerebral peduncle was much reduced in size, and the opposite anterior pyramid of the medulla was greatly atrophied. In the fresh cord a triangular area of degeneration could be seen involving the left lateral tract, and especially marked in the cervical enlargement.

Pneumococcos Abscess following a Local Lesion in the Course of Pneumonia.—At a recent meeting of the Société de Biologie, ZUBER (*Semaine médicale*, 1896, No. 4, p. 27) reported a case of pneumonia in which an abscess developed at the site of puncture made in injecting caffeine benzoate subcutaneously. The pus evacuated contained pneumococci in pure culture, as shown by direct examination, by culture, and by inoculation in guinea-pigs. This observation illustrates the relation between a point of lower resistance and a constitutional disorder of infectious origin, due to a local lesion with localization of the infective micro-organisms.

Congenital Volvulus.—At a recent meeting of the Société anatomique de Paris, PETIT (*Bull. de la Soc. Anatom. de Paris*, tome ix, Fasc. No. 17, p. 670) reported the case of an infant dead three days after birth in the sequence of symptoms of irremediable intestinal obstruction, the condition of the child forbidding surgical intervention. There had never been an intestinal evacuation, although the anus was patulous. Upon post-mortem examination, a volvulus was found to exist at the junction of the cecum with the ascending colon. The intestine was dragged to the right, passing beneath the cecum, which was provided with a long mesentery. The cecum and the adjacent ileum were twisted twice upon themselves, and continuity with the colon was obliterated. The large intestine was not well developed, while the small intestine was greatly distended and contained a considerable amount of fecal matter.

THERAPEUTIC NOTES.

Rectal Insufflations of Boric Acid for Intestinal Atony — MERKLE (*Münchener medicin. Wochenschrift*, 1895, No. 52, p. 1209) reports the successful employment of rectal insufflations of boric acid for the relief of the flatulence and constipation dependent upon atony of the bowel. For this purpose he uses a powder-blower, the anointed nozzle of which is introduced into the rectum after thorough separation of the nates. From 30 to 60 grains of boric acid are thus introduced. The nozzle of the insufflator should have a calibre of from .25 to .4 inch and the rubber bulb should be sufficiently large and stout to accomplish its purpose effectively.

Treatment of Grave Anemia with Subcutaneous Injections of Iodine and Iron.—

I. Take of:	
Pure iodine . . .	3 grains
Potassium iodide . .	A sufficient quantity
Distilled water . .	5 fluid drams.—Mix.
II. Take of:	
Iron and ammonium citrate	15 grains
Distilled water . .	From 2½ to 5 fluid drams.—Mix.

Once or twice daily, fifteen minims of the first solution are injected into the thigh, followed at once by a similar injection of the second.—MENELLA, *Médicine moderne.*

The Treatment of Chilblains.—In the intense form of chilblains without ulceration the affected parts should first be enveloped in aseptic compresses wet with a decoction of walnut leaves (from 1½ drachms to half an ounce of the leaves to a quart of water), and the whole covered with an impermeable dressing.

When the irritation has somewhat subsided the wet dressing may be replaced by an ointment or a powder, as follows:

Boric acid		gr. xv.
Tannic acid . . .		gr. v.
Vaselin		ʒ ijss.—M.
Starch, Lycopodium	aa	ʒ ijss.
Tannic acid . . .		gr. v.

To maintain the application suitable gloves may be worn. In the mild form of the disorder the decoction of walnut leaves is applied morning and night, and during the day the ointment or powder formulated is used, gloves being worn meanwhile.

When ulceration exists the wound should first be carefully washed with a solution of mercuric chloride 1:1000, and the compresses applied wet with a solution 1:2000. The ulcerated surface may be touched with tincture of iodine or camphorated naphtol, and then covered with aseptic gauze impregnated with borated vaselin or glycerole of starch. When granulations have formed in large numbers the stick of silver nitrate may be applied gently. Should these measures fail, an ointment may be employed, such as that of zinc oxide. If needed constitutionally, cod-liver oil or iron iodide should be administered.

In a prophylactic way those susceptible to chilblains should be advised to be active when exposed to cold and to avoid prolonged exposure and also abrupt change from cold to heat, and *vice versa*. The use of cold lotions throughout the winter may also prove serviceable. At the same time a pill constituted as follows may be taken internally from twice to four times daily:

Quinin. Sulphate, Ergot	aa	gr. ⅔
Powdered digitalis-leaves .		gr. $\frac{1}{12}$
Extract of Belladonæ . .		gr. $\frac{1}{6}$

—*Press médicale*, 1895, No. 70.

Intoxication from the Topical Application of Pyrogallol.—VOLLMAR (*Deutsche medicin. Wochenschift*, 1896, No. 3, p. 45) has reported the case of a man, 69 years old, who had suffered with psoriasis for twenty years and who was given a 10-per-cent. ointment of pyrogallol for topical application. Two hours after rubbing the ointment into the forearms, there was complaint of intense pain in these parts, with swelling and heat and general restlessness. The little ointment still remaining was at once removed, and cold affusions made. The temperature rose above the normal, and albumin appeared in the urine. In the course of several days these symptoms receded and the case gradually progressed to perfect recovery. There was evidently in this case an idiosyncrasy to pyrogallol, as the amount that could have been absorbed must have been very small.

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SATURDAY, FEBRUARY 29, 1896.

ANTIVIVISECTION.

IN our issue of February 15th we devoted considerable space to a full and complete exposition of the sweeping and indeed almost prohibitory character of the bill now before Congress restricting vivisection in the District of Columbia. And attention was called, in our editorial on the subject, to the probability of this radical movement in Washington being the signal to the so-called humane societies throughout the country for similar local movements in every State in the Union.

This suspicion was evidently well founded; for already a bill of similar import has been introduced into the Legislature of Massachusetts, and it is reported that a like measure is being prepared for the New York Legislature. The Massachusetts Medical Society is showing commendable promptness and vigor in opposing this bill. The society has issued a circular to all its members and to all the prominent medical and scientific men of the State, calling upon them to communicate at once with their respective representatives in the Legislature, urging upon them the absolute necessity of opposing this measure. As the various state societies are liable to be called upon to take similar action at no distant day, it may be well to state that this circular announces that "from the time when Harvey discovered the circulation of the blood 'by frequently looking into many and various living animals' down to the present day, when the discovery of the antitoxin treatment has robbed diphtheria of almost all its terrors, nearly every important advance in medicine has been rendered possible by knowledge acquired through the careful study of the phenomena of life as revealed by what are popularly known as 'vivisections'; that such investigations are at present conducted with every precaution against unnecessary suffering and by men who do not admit for a moment the claim of any society to be actuated by motives more humane than those by which they themselves are guided, and that, as there is no abuse to be corrected, the proposed legislation is totally uncalled for."

There is no doubt that the bills already presented, and others which are doubtless being prepared, if enforced will seriously hamper and may practically abolish biological and medical research. It is therefore the part of wisdom to put forth every effort to strangle them in their birth.

But we, as a profession, may as well recognize the fact that this is a question that will not down. It will rise year after year to hamper and annoy. We would therefore advance the suggestion that the wise and prudent course is, not to await the action of the humane societies, but for each State Medical Society to take the initiative, to instruct its committee on legislation to have a proper bill drawn up, presented, and placed upon the statute-books. This would put a stop to the constant agitation of the subject and preserve by proper restrictions (and it should have restrictions) this valuable and indispensable method of experimental medicine.

A NEW BREED OF "DOGS OF WAR."

No animal has been more abominably and unjustly slandered in proverb and metaphor than the dog. His name has been made a synonym for every evil passion which stirs our bosoms, from the cowardly treachery implied in "Is thy

servant a dog that he should do this thing?" to the savage fury of the classic "dogs of war." And yet these attributes are practically never displayed by the noble brute—except where he has had to associate too much with man, especially in the Orient, where most of these metaphors originated.

At last, however, the "leaden foot" of Justice seems to be coming his way, and he is being brought before the world, in relation to warfare at least, in a rôle more appropriate to his true character.

An ingenious German "cynophile" has been developing the dog's well-known hunting and "ranging" powers as a sort of auxiliary field-hospital corps for finding and carrying aid to the wounded after a battle. According to a recent report in *The Lancet* his experiments gave such promising results that the military authorities recently invited him to make a formal field trial of his canine corps before a committee of experts. The "wounded" were represented by some twenty infantry soldiers, who were scattered behind stumps and rocks, in gullies, and among underbrush over quite a stretch of rough, unbroken country. At the order "Seek wounded" the dogs dashed away, and in a comparatively few minutes discovered and "located" every one of the hidden soldiers. The animals carry under their necks barrel-shaped canteens, each containing water, brandy, and cakes of compressed peptonoids in its compartments. Upon their backs are small packages of surgical dressings, a blanket in cold weather, and in the daytime a number of small flags or pennants with slender pointed stems which the wounded man can set up in the ground by his side, and thus guide the rescue party to him. After dark a small portable electric lamp is attached to the dog's forehead, so that his movements can be followed and his "finds" located. In the intervals of active service the dogs are trained to assist the picket line, acting as water-carriers and as estafets. The committee of experts were so impressed with the value of the dogs that it is intended to have a pack accompany several of the infantry regiments in the field manœuvres next summer. Any one who knows something of the fearful agony often endured from thirst, sunstroke, attacks of insects, and exposure by the wounded in the hours, or even in some cases days, following a battle, will see at once the immense value of such a "corps." In our late war many a poor fellow's life was lost solely from the delay in reaching him; and even in some cases after heavy and scattered fighting in the ravines among the thick underbrush, his remains were not discovered until weeks afterward. The "missing" quota of a regiment is often almost as large as its "killed." All honor and success to the new and only *genuine* "dogs of war," who in the humanity—or shall we say "caninity"?—of their mission have rather the advantage of their comrades of the "higher" species.

THE YEAST PLANT AS A PATHOGENIC ORGANISM.

WE have already taken notice in these columns[1] of the introductory work upon the supposed relation of the yeast fungus to the production of certain tumors. Investigation upon the pathogenic properties of these organisms has been unremitting, and we now propose to present another review of the subject, as it promises to occupy a prominent place in the parasitologic discussions of the near future. It is at least safe to predict from the present tendencies that the budding-fungi are destined to receive a large share of the attention which has been so lavishly bestowed upon the supposed protozoan parasite of malignant tumors during the last three years.

The exact botanical position of the yeast plant has not been determined, though it has been known and employed so long in the fermentation industries. The morphology of many species of the yeast family is so inconstant that several botanists have looked upon the organism as a developmental stage of one or another of the filamentous fungi. Thus Juler and Jörgensen have very recently attempted to prove by their studies that the budding yeast cells represent but one stage in the development of true molds. When it is remembered that certain filamentous fungi like *Achorion Schoenlinii*, and *Trichophyton tonsurans* are well known human parasites, and that some molds like *spergillus* have been found to flourish in a parasitic relationship in man and other animals, both naturally and experimentally,

[1] Editorial, April 6, 1895, pp. 383–384.

then it does not seem improbable that the yeast plant, which is so much better adapted morphologically for a parasitic existence, should find a favorable soil for growth in the animal body.

The earlier experimental work upon the pathogenesis of the yeast organism was done by Neumayer, and Raum. Neumayer found that these plantlets possessed wonderful resistance against the digestive juices of animals, as living yeast-cells could be regularly recovered in the stools after the ingestion of considerable quantities of yeast. The administration of large quantities of this material by the mouth, led to a gastro-enteric catarrh, doubtless on account of the irritative effects of the fermentative products resulting from the metabolic activities of the living yeast-cells. Raum used pure cultures of various species of *Saccharomyces* and uniformly produced death in rabbits by intravascular injections. Examinations of the organs of these animals showed that the fungal cells accumulated only in the lungs, where they thrombosed the blood-vessels. In only one case, in which a rabbit died two or three weeks after an intravenous injection, could Raum recover the organisms from the subcutaneous tissue, where a small caseous tumor had formed.

In 1894 Busse claimed to have isolated a species of yeast in pure culture from a sarcomatous-like subperiosteal neoplasm on the tibia of a woman. Inoculations with the tumor tissue and with pure cultures of the yeast fungi into rabbits and dogs were successful in so far that they showed the parasites to possess pathogenic properties; but no true tumors were produced. The striking resemblance of the vegetable cells in the affected tissues led Busse to compare them with the cancer inoculations, especially those described by Darier and Wickham.

Sanfelice followed with a record of his experiments with artificial cultures of a pathogenic variety of the yeast fungi obtained from fermenting fruit juice. The remarkable feature about this work lies in the regularity with which the experimenter succeeded in producing *neoplastic formations* in the lymphatic glands and certain visceral organs of his inoculated animals. Guinea-pigs were largely employed in this work, and after an interval of four to six weeks following an injection they died, showing numerous tumor-like foci from which the fungi could be recovered both in culture, and in various microscopic preparations. In his several published reports Sanfelice has always dwelt upon the resemblance of the yeast-cells in the infected tissue to the cancer parasites of almost all the workers who have in the past three or four years described these objects.

Simultaneously with these researches, Colpe found a pathogenic budding-fungus in a case of chronic cervical endometritis which he believed to be the etiologic factor in the affection.

Fermi and Aruch of Rome obtained a yeast culture with marked pathogenic properties from the lympathic tissue of horses affected with a peculiar form of infectious lymphangitis. From the purely histological side, Ajevoli and Pianese have attempted to identify certain so-called tumor parasites with yeast cells; and Roncali gives an elaborate description and a highly colored lithographic picture of certain round or oval bodies found in sections of an adeno-carcinoma of the human ovary, wherein he insists upon their yeast-like character, and their identity with similar objects previously looked upon as the protozoan parasites of malignant tumors. Corselli and Frisco present a preliminary communication upon their studies of pathogenic budding-fungi, and they report a case of sarcoma of the mesenteric glands in a woman, accompanied by chylous ascites in which pure cultures of yeast were obtained from the tumor tissue and from the ascitic fluid. These cultures were pathogenic in rabbits, dogs, and guinea-pigs, and in the latter animals tumors were produced very like those described by Sanfelice, and the animals died in twenty or thirty days.

As tempering, somewhat, these almost inconceivable results, obtained mostly by Italian investigators, comes the painstaking experimental study by Lydia Rabinowitch, made under the directions of Professor Koch. This investigator made inoculation experiments with about fifty different species of yeast. Out of these she found seven which possessed pathogenic activity when injected subcutaneously into mice and rabbits, though none of these cultures was pathogenic in guinea-pigs. The animals died

between the first and fourteenth day following the inoculation; vast numbers of yeast cells could be found in all the organs on appropriate treatment; and the pure cultures could be recovered from these organs. For the most part the fungi were disposed in the tissue spaces, though occasionally an intra-cellular parasite could be found. In all of these experiments, however, no chronic illness with the formation of neoplasms, such as noted above, could be induced.

From this very brief summary of the work done for the most part during the past year upon the yeast plant as a disease-producing organism, it seems to us certain that a new and very promising field of mycologic research has been opened—one which promises to materially extend our knowledge of certain infectious diseases, and one which may prove of vast importance in solving the mystery which still surrounds the etiology of malignant neoplasms.

We can at least feel assured, with the illustration afforded by the sporozoan theory of tumors, that a flood of literature by a host of investigators working in the new field will be poured upon us during the next year or two. Pathology has its fashions, and every one wants to be in the fashion.

ECHOES AND NEWS.

THERE have been no startling discoveries in the experiments with the X ray during the past week. Observations have been continued along the lines already suggested, and with marked success. By the use of a bell-jar, placed over the Crookes tube, the time of exposure has been reduced to seconds, making the pictures practically instantaneous. One experimenter announces that he has increased greatly the penetrating power of the ray and has thus secured shadow pictures through a block eight inches in thickness. Practical application has been continued in locating bullets, buckshot, needles, and other foreign bodies in the flesh. But no one has succeeded in destroying bacilli in their local habitat in the human body.

A BILL has passed the Legislature of Virginia authorizing the appointment of female physicians for the female wards of the State insane-asylums.

THE Illinois Medical College, of Chicago, has, through the advice of the more conservative members of its faculty, abandoned the proposed hypnotic clinic. The matter was receiving such sensational prominence that this course became necessary.

HAVERHILL, Mass., is suffering from an epidemic of diphtheria, and the authorities have been requested to formally order the schools closed. Of sixteen cases reported all have been traced to one school building.

THROUGH a misunderstanding that has arisen between the faculty and the Board of Trustees of the New York College of Dentistry, the legal existence of this prosperous institution of learning is threatened.

A CIVIL-SERVICE examination is staring the city physicians of Rochester, N. Y., in the face, since the Mayor refuses to remunerate them unless supplied with certificates of the Civil-service Examining Board.

OHIO has just acquitted herself in a most commendable way, by passing, without amendment, and with only one dissenting vote, a law regulating the practice of medicine. The profession of that State are to be congratulated upon this unprecedented success as a result of almost a quarter of a century of patient effort.

THE annual convention of the World's Congress of Medico-climatology, held at San Antonio, Tex., formally adjourned on February 22. Papers were read by Dr. A. F. McKay, of Chicago, and Dr. A. M. Johnston, of San Antonio. A committee composed of Drs. Paul Paguin, of St. Louis; C. D. Hurt, of Atlanta; G. M. J. Bliem, of San Antonio; J. A. May, of New Holland, O.; and J. T. Acomb, of Pennsylvania, was appointed to report at the next convention on the advisability of petitioning Congress to establish sanitariums in different parts of the country for scientific study of consumption. Atlanta, Ga., was chosen as the next place of meeting.

THE Camden County Medical Society, of New Jersey, has recently celebrated with appropriate ceremonies the semi-centennial of its organization. Among other proceedings of interest, busts of two of its founders and charter members, Richard M. Cooper, M.D., and Othniel H. Taylor, M.D., were presented to the Society.

THE Woman's Health Protective Association of Philadelphia are adding laurels to the reputation of their association by their activity and success in procuring improved service from the street-cleaning department of that city.

DR. ALEXANDER T. HUNTER died at his home in Spuyten Duyvil, N. Y., Feb. 14, 1896. He was born at Conesville, N. Y., in 1839, and was graduated from the New York University Medical College in 1863. In 1890 he was elected president of the New York County Medical Society. He was the first president to succeed himself since the organization, in 1807.

THE old and well-known College of Medicine of Ohio, situated at Cincinnati, has become the Medical Department of the University of Cincinnati, and hereafter will be known by the double title of "The Medical Department of the University of Cincinnati" and "The Medical College of Ohio."

ON February 4, 1896, the Meharry Medical College of Tennessee, the principal medical college for the negro of the South, if not of the United States, held its commencement exercises, graduating eleven candidates. As a rule, the alumni of this institution are doing commendable work among their own race in the Southern States, where they command general respect.

DR. DONALDSON SMITH, of Philadelphia, returned last week from central Africa, where he has discovered several curious tribes of people, concerning which he will make a scientific report in due time.

DR. JOSEPH JONES, one of the most prominent members of the medical profession of this continent, died at his home in New Orleans on the 17th instant. He was a graduate of the University of Pennsylvania in 1855, and almost immediately thereafter was made professor of chemistry at the Medical College of Savannah, Ga., and filled this and associate chairs in the University of Georgia, the University of Nashville, and Tulane University at New Orleans in rapid succession. Since 1868 he has been identified with the latter, giving liberally of his time and remarkable talents to the service of his city and state. To him more than to all others is due the improvement of the sanitary condition, not of New Orleans alone, but of the whole Valley of the Mississippi. His ability as a scientist and historian was perhaps more widely recognized abroad than in this country.

DR. WILLIAM THOMSON, professor of ophthalmology at the Jefferson Medical College, Philadelphia, has been elected to succeed the late Dr. H. Earnest Goodman as attending surgeon to the Wills Eye Hospital.

ST. MARY'S Free Hospital for Children of New York, has purchased near Norwalk, Conn., thirty acres of land, and will erect on the property commodious hospital buildings. The property will be known as the Summer Home of St. Mary's Free Hospital for Children of New York.

MANY cases of typhoid fever have developed within the past few weeks in the Greenville district of Jersey City. The source of the contagion has been discovered in the wells from which the drinking-water was taken.

THE second annual meeting and dinner of the Brooklyn Alumni Association of the Bellevue Hospital Medical College was held at the Lincoln Club, Brooklyn, on Monday night, February 17, 1896. The following officers were elected for the coming year: Dr. George R. Fowler, president; Dr. George McNaughton, vice-president; Dr. L. W. Pearson, secretary; Dr. W. Waterworth, treasurer; Drs. R. M. Wyckoff, A. Pell, and J. Scott Wood, members of the Board of Managers. Toasts were responded to by Prof. A. A. Smith, M.D., of Bellevue College, Dr. W. H. Katzenbach, ex-president of New York Alumni Association, Drs. G. A. Evans, G. R. Fowler, and others.

DENNIS' AMERICAN SYSTEM OF SURGERY.—Scant attention is due to an anonymous paragraph which recently appeared in an English periodical, charging plagiarism against the new System of Surgery by American authors, the concluding volume of which will shortly appear. The charge is devoid of details and the name of the accuser is withheld, so that more than a general and absolute denial of the truth of the statement is alone possible. American surgeons, especially those of the eminence of the contributors to the American System of Surgery, have neither need nor desire to borrow ideas or language from their English *confrères*. The derivation of illustrations from various sources is customary on both sides of the Atlantic and is a practice common to nearly all medical works, without regard to country. The essence of the charge seems to lurk in the fear that the American System of Surgery would prove too successful a rival to native works, and hence the attempt on the part of English publishers to protect their market against competition. What higher compliment could be paid to the excellence of this latest production of American surgeons—the confession of fear to submit to rivalry?

A MOVEMENT is again on foot looking toward building, or making provision for a hospital for contagious diseases in the city of Brooklyn, to which persons able to pay for attention and care could be taken,

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RESOLUTIONS ON THE DEATH OF THE LATE DR. JOHN H. RIPLEY, OF NEW YORK.

AT a special meeting of the Medical Board of St. Francis Hospital, of New York city, held February 18, 1896, the following resolutions were adopted:

WHEREAS, It becomes our painful duty to announce the death of Dr. John Howard Ripley, attending physician to the St. Francis Hospital, New York, and late president of its medical board; therefore, be it

Resolved, That the Medical Board desires to place on record its due appreciation of his long and valuable services to this institution, faithfully and cheerfully rendered for nearly a quarter of a century.

Resolved, That from his first connection with this hospital he was an ever-willing servant for its best interests, an ardent promoter of its highest aims, and an active participant in all its charitable benefactions.

Resolved, That his untiring zeal in the performance of his arduous and responsible duties, his wisely conservative judgment, his painstaking accuracy of observation, and his ever available and profound knowledge of clinical phenomena were qualities that command the highest respect of his associates and stimulate the emulation of all who share the results of his unselfish labors.

Resolved, That the remembrance of his manly disposition, his frank manner, his energetic spirit and scholarly attainments will ever serve as a cherished lesson from the well-ordered life of a dutiful worker, an indefatigable investigator, and a model physician.

GEORGE F. SHRADY, M.D., President.
G. M. EDEBOHLS, M.D., Secretary.

CORRESPONDENCE.

COLD BATHS A HEART STIMULANT.

1605 WALNUT STREET,
PHILADELPHIA, February 22, 1896,

Editor of THE MEDICAL NEWS.

DEAR SIR: In the last issue of the NEWS (p. 223) I have been made to say that my greatest contra-indication to the cold bath is a feeble heart. This is incorrect. I stated that an excessively weak heart should be regarded as *one* of the contra-indications to the rigid cold-bath treatment. If for no other reason, it is inadvisable under the circumstances, because of the fact that the patient exerts himself or even struggles against the unpleasant effects of the extreme cold. No one is more fully convinced that the external use of cold is a potent stimulant to the nerve centres, including the cardiac, than myself.

Sincerely yours,
J. M. ANDERS.

OBSERVATIONS ON THE X RAY.

BY MR. T. C. MCLEENNAN, B.A., AND MR. C. H. C. WRIGHT, B.APP.SC., AND T. KEELE, B.APP.SC., OF TORONTO, CANADA.

[SPECIAL CORRESPONDENCE TO THE MEDICAL NEWS.]

THESE observers, after experimenting for some time and obtaining clear negatives from long exposures to the X rays, succeeded in reducing the time necessary for a distinct image, through five folds of black paper, to one second. These results were obtained by covering the Crookes tube with a glass bell-jar. While these gentlemen do not wish to be understood as claiming that this conclusively proves reflection of the X rays, this explanation for the results obtained appears to be the only reasonable one. They found that without the bell-jar a piece of plate-glass placed between the tube and the sensitized plate, and at a distance of 10 cm. from each, acted as an opaque screen; but when the bell-jar covered this arrangement the action on the plate was very distinct immediately below the glass screen. The rays are in this case probably reflected by the bell-jar around and under the glass screen. These observers succeeded also, by this method of concentrating the rays, in locating the point of a needle between the second and third metatarsals in a patient's foot so definitely that the surgeon was enabled by a single incision to remove it. They are now working on the subject of the reflection and refraction of the rays, and they will make a report of their progress to the Canadian Institute at its first meeting in March.

CONTINUED EXPERIMENTS WITH THE X RAY.

[MONTREAL LETTER FROM OUR SPECIAL CORRESPONDENT.]

MONTREAL, Canada, Feb. 17, 1896.

PROFESSOR COX, of the science department of McGill University, continues to experiment with the X rays. He is somewhat hampered by the difficulty of obtaining Crookes or Geisler tubes. Several of those in stock which were remarkably fine ones were destroyed by using too powerful currents, the connections at the poles having melted out. Some experiments have been made with a view to employing induction and thus doing away with the metallic connections, but they have not yet reached a satisfactory stage. The Rumkorff coil used by Professor Cox is an old one, but apparently a very good one, as it gives sparks ten inches in length. A few days ago a medical student who had been suffering for some years from an injury of the elbow joint submitted his arm to the X ray, when a clear picture of the injury was seen. With this positive diagnosis it is probable that, as in the case of the young man with the bullet in his leg, the medical student will shortly submit to operation for the cure of his injury. One of Professor Cox's assistants yesterday obtained a very fine photograph of an athlete's hand. Each bone and joint shows in a remarkably distinct manner, those in the palm of the hand and wrist being as clearly defined as those of the fingers. The flesh shadow which surrounded the bones in the previous photos is hardly visible in the present picture.

STREET EXPECTORATION.

DENVER, Col., Feb. 17, 1896.

To the Editor of THE MEDICAL NEWS:

SIR:—I often read with considerable indignation some of the nonsense written and published, after immature consideration, in regard to Colorado.

In your issue bearing date of February 15th, one of your contributors writes that "a person(?) recently returned from Colorado said 'the streets are *fairly slippery* from the expectorations of consumptives who are there for their health.'" Of course the assertion is not your contributor's own, but he gives publicity to it as though he vouched for its truthfulness, and thus another silly lie is started upon a long and malicious career, bearing a certificate of character from the writer.

Medical writers ought to given more careful investigation to such bold statements before accepting and reiterating them.

Colorado physicians keenly realize that our streets are not yet as clean as those of New Jerusalem, nor can they be so until education and refinement have more thoroughly leavened the mass of our population. But I know that our streets compare very favorably, as to freedom from expectoration, with those of New York, Philadelphia, Chicago, Pittsburg, St. Louis, and Detroit, perhaps even with those of Syracuse.

In our street-cars any one who cares to look may see this legend:

BUREAU OF HEALTH NOTICE:
DO NOT SPIT ON THE FLOOR,
BECAUSE Consumption is Communicated by the Expectoration.

In hotels, lodging-houses, places of public resort, and in many stores similar placards with explanatory, succinct paragraphs are to be found.

Thousands of pamphlets and circulars in regard to the prevention of tuberculosis are distributed to patients by the Bureau of Health, and apartments that have been occupied by consumptives are fumigated by the authorities.

In a word, there exists in Colorado, probably to a greater extent than elsewhere in America, proper offi-

cial recognition of the contagiousness of tuberculosis; and that official action is but the expression of a widespread, general, and intelligent realization by our community (30 per cent. of them consumptives) of the necessity for such care. Very respectfully,

WM. P. MUNN, Health Commissioner.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Monthly Meeting, February 17, 1896.

JOSEPH E. JANVRIN, M.D., PRESIDENT.

THE ULTIMATE RESULTS, IN MY OWN EXPERIENCE, OF VAGINAL HYSTERECTOMY FOR CANCER ORIGINATING IN THE CERVIX UTERI.

DR. JANVRIN made some introductory remarks on assuming the presidency of the Association, and then read a paper with the above title. (See page 225.)

DISCUSSION.

DR. WILLIAM T. LUSK said that he believed that he was the skeptic at the meeting of the Obstetrical Society referred to in the paper. At that time he had asked whether any one had ever seen a case of the kind mentioned by the president, Dr. Janvrin, in which there was not a speedy relapse after operation. At all events, there had always been a speedy recurrence in his own cases, and he thought that this was the experience of most operators. He had never been able to gather any very definite information in regard to this subject. When he was in Europe last summer he had spoken to Jacobs in regard to the matter, and the latter had given a very vague reply, but at the same time acknowledged that the results of his cases of vaginal hysterectomy were very disappointing. In London, Knowsley Thornton had spoken in very much the same strain, and the same was true of other prominent gynecologists. On account of the unsatisfactory results that had been met with, Dr. Lusk said that he, as well as a number of other operators, had returned to the old Shroeder method.

In view of these facts, the showing made of the cases presented this evening by Dr. Janvrin was all the more remarkable, and he wished to heartily congratulate the president on the very gratifying measure of success that he had attained. Certainly the operation of vaginal hysterectomy as a procedure was in every way preferable to the Shroeder operation. As performed at the present day, it was attended with the smallest possible amount of risk, and it was much easier to do than the Shroeder operation. As a result of the brilliant success reported here to-night he would take hold of the subject with new interest and zest, and he hoped that in the future he would be able to report results less gloomy than those he had hitherto met with.

DR. HERMAN J. BOLDT thought that in the future the results of this operation would be much better than they had been in the past. It was very important that the cases operated on should be selected with great care and that the operation should be performed at as early a stage of the disease as possible. Much also depended, he believed, on the technique. Until recently there had been much to condemn in the manner in which the operation was done, but of late years advances had been made. Especially was this true in regard to the use of the cautery, as advocated by Dr. Byrne in this country, as well as some European authorities. When this was more generally adopted, he believed that the results met with would be appreciably better. One great cause of recurrence was that, on account of the condition of the lymphatics, the surgeon was apt to infect some of the sound tissues during the operation, and by the use of the cautery this could be avoided. On the whole, however, he had to confess that up to the present time he had been obliged, by the results obtained, to take very much the same view of the subject that Dr. Lusk did. In conclusion, Dr. Boldt congratulated Dr. Janvrin on his skill in avoiding injuries to the ureters during his operations, as this accident was not infrequently met with by other operators. In connection with his remarks he presented a uterus, in the removal of which the Pacquelin cautery had been used.

DR. GEORGE T. HARRISON regretted that he had not been able to get to the meeting in time to hear the president's paper. He said that of all the triumphs of modern gynecology this was the grandest achievement—to be able to remove the entire uterus when the seat of carcinomatous infiltration, and thus save the lives of many women who formerly would have been irrevocably doomed. The statistics which he had gathered on the subject showed that about 17 per cent. of all those operated on were permanently cured. But, Why, he asked, should the other 83 per cent. be allowed to perish? He believed that as soon as it was possible to make a diagnosis earlier in this class of cases, we should have much better results to show. This was a matter of extreme importance, because cancer, we have every reason to believe, was at first a purely local disease.

One great difficulty in the way of improvement in this respect was that women do not appreciate the great significance and importance of atypical uterine hemorrhages occurring, especially in middle life. He therefore thought that every family practitioner should make it a matter of conscience to call a competent gynecologist in all cases of atypical hemorrhage in this class of patients. If, in the majority of instances, an early diagnosis of cancer could be made and the operation be performed as soon as possible thereafter, the statistics would undoubtedly show a very much larger percentage of cures. It could be laid down as a rule that when five years had elapsed after the operation without any signs of recurrence the patient might be regarded as positively and permanently cured. The mortality from the operation itself was a little over 9 per cent.

DR. A. PALMER DUDLEY, who was present by invitation, said that he did not think he could add much of value to the discussion. Still, there were some points to which it might be well to call attention. In considering the liability to recurrence in any given case, there were

three prominent circumstances to be taken into consideration, viz.: First, the age of the patient; second, the extent of the disease; and, third, the manner in which the latter was attacked. A woman who was in active menstrual life was much more apt to have a relapse than one who had passed the climacteric. Also, if a considerable portion of the vagina or other surrounding parts had become involved, there was a much greater chance of recurrence than in cases of a simpler character.

Dr. Dudley spoke for some time in regard to the technique of the operation, and said that it was still an open question whether the open method was preferable or not. Personally he believed it was better to secure primary union whenever this was possible, rather than healing by granulation, for the reason that in the case of the former there was less liability of return, and he had frequently observed that recurrence was apt to begin in the seat of the cicatrices left by granulating wounds. There was one advantage, however, he thought, in the use of the clamp, viz., that by this means portions of the broad ligament could be crushed at a higher point than could be reached by ligatures, and without the danger of doing injury to the ureters.

As to the general importance of an early diagnosis, he fully agreed with Dr. Harrison, but he thought it necessary to remember that hemorrhage is not an *early* symptom. Pain, discharge, feelings of discomfort, were the things that should arouse the suspicion of cancer before any hemorrhage appeared, and he was of the opinion that every general practitioner should be able to make an early diagnosis of the disease himself. The time would come, he had no doubt, when this would really be the case, and then we should be able to show much better results than at present. In reviewing his own cases, he had found that the average time of recurrence was from eighteen months to two years, and he thought this was about the average of operators in general.

DR. JANVRIN, in closing the discussion, said that he agreed with Dr. Boldt as to the importance of carefully selecting the cases for operation, and with Dr. Harrison that cancer was primarily, and for a considerable length of time, a purely local disease. While in cases seen early vaginal hysterectomy offered a very excellent chance of permanent cure, in those in which there was a regular cauliflower excrescence, with extensive implication of the vagina or other parts, such an operation was, in his opinion, certainly unjustifiable. In these advanced cases it was sometimes necessary, however, to perform a modified operation (palliative and not radical) for the relief of hemorrhage and pain, and in this way the patient could be often spared much suffering in her declining days.

Personally he (Dr. Janvrin) had never directly closed the peritoneal surfaces, but it was his practice to draw the broad ligament stumps down into the pelvic cavity, on a level with the upper part of the vagina and then apply the gauze tampon, thus shutting off the peritoneal cavity from all raw surfaces below. If he found much difficulty in applying ligatures to the broad ligaments, he frequently combined the use of the hemostatic forceps with the ligatures, sometimes using a half-dozen, and thus hastening the operative work. The forceps were usually removed at from thirty-six to forty-eight hours. In every case reported in the paper the specimen had been examined by a competent pathologist and pronounced malignant, and in several instances a portion of the cervix had been removed prior to the hysterectomy and examined and pronounced malignant. In conclusion, he said that he felt exceedingly gratified that the subject had been so fully and thoroughly discussed by the gentlemen who had had large experience in operative work in these cases.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, February 20, 1896.

JOSEPH D. BRYANT, M.D., PRESIDENT.

THE RECENT PROGRESS OF TREATMENT IN AFFECTIONS OF THE UPPER RESPIRATORY TRACT.

(*a*) *Nose and Accessory Sinuses.*—DR. F. H. BOSWORTH opened the general consideration of the above theme, by a paper on the nose and accessory sinuses. He said that among the prominent factors that had been responsible for the progress in this department of medicine during the past fifteen years was the discovery of the local anesthetic properties of cocaine, by Carl Koller. Aside from its anesthetic action, this agent had contributed much to larynology and rhinology by its property of squeezing the blood out of vascular tissues, and so facilitating both diagnosis and treatment. In 1885 had appeared what he considered to be the first paper in which was presented the true physiology of the nasal passages. He had contended that the function of the turbinated bodies was to pour out serum, which was taken up again by the inspired air. A proper appreciation of the important function of the nasal passages made it evident that the important indication for treatment was to restore, or maintain the normal respiratory function of these passages. He did not think the nasal septum had any particular function, and consequently if it encroached upon the lumen of the passages it was proper to cut it away freely. It was now known that a purulent discharge indicated an empyema of one of the accessory sinuses. Ethmoid disease he has found to be frequently accompanied by diseases of the antrum. Both diagnosis and treatment were more definite than formerly.

DR. M. J. ASCH said that in the enthusiasm over the value of cocaine it should not be forgotten that the abuse of this drug had often led to the development of a drug habit almost as baneful as the alcohol or morphine habit. Another danger from cocaine arose from this very important property of temporarily depleting the tissues of blood, for operations done under cocaine anesthesia were sometimes followed by secondary hemorrhage. Although puncture of the inferior meatus in disease of the maxillary sinus had been recommended as a simple method of treatment, he had found that such was not the case, and that owing sometimes to the peculiar conformation of the sinus a puncture through this meatus entirely failed to reach the sinus.

DR. R. C. MILES said that he could hardly conceive of nasal surgery being carried on intelligently without the

use of cocaine. The nasal septum, in his opinion, was not as useless as Dr. Bosworth seemed to believe; its numerous glands should be enough to refute such a statement. In the treatment of polypoid degeneration of the frontal sinus, he had obtained good results from curetting.

DR. J. W. GLEITSMANN said that he had also met with difficulty in puncturing the antrum of Highmore from the lower meatus with Schmidt's instrument, until Schmidt had called his attention to the fact that the point of puncture should be about three-fourths of an inch posterior; since then he had frequently done it with good result.

DR. BOSWORTH said that he had never met with a case of cocaine habit that had seemed to him much more serious than the chewing-gum habit. In many of the so-called cases of cocaine habit alcohol or morphine was an important factor.

(*b*) *The Pharynx.*—DR. J. E. NEWCOMB read a paper on this division of the subject. Speaking of the best general anesthetic to use for very short operations, he said that there was much evidence to show that the bromide of ethyl was particularly well adapted for this purpose. With this agent the period of excitement is very transient, vomiting is rare, the vapor does not irritate, and there is no tendency to cardiac disturbance or cerebral anemia. Its disadvantages are that it produces hypersecretion, and if too long inhaled may produce muscular contractions. In the production of local anesthesia, it had been found that the effect of cocaine could be prolonged and intensified by mixing it with antipyrine; indeed the hypodermic injection of a 50-per-cent. solution of antipyrine alone had been found sufficient to relieve dysphagia for twelve hours at a time. In the treatment of naso-pharyngeal tumors, the speaker said, the hot snare was not now so commonly resorted to. Electrolysis had yielded good results, but statistics on this point were far from accurate. Metallic electrolysis—*i.e.*, the use of a certain metal for the positive electrode, by which this metal was dissolved by the current and deposited deeply in the tissues—promised good results. When this method was employed, it was customary not to use cocaine, as the operator desired to be guided somewhat by the sensations of the patient. Mycosis was a condition, often dependent upon a rheumatic or gouty diathesis, which demanded the use of antiseptic solutions, or, better still, the application of the electro-cautery.

Enlarged tonsils in persons under sixteen years should be removed by some form of guillotine, but in older persons, or where the tonsils were fibrous, and liable to bleed, igni-puncture was more appropriate. For adults, if the shape of the tonsil permitted, he favored the use of the hot snare. Where the tonsils were acutely inflamed, one of the best internal remedies, according to his experience, was salol, although at the outset a tonsillar inflammation might frequently be checked by the local application of guaiacol. Where suppuration seemed inevitable, one should not wait for the abscess to point, but should resort to early incision.

DR. GLEITSMANN said that he had found that bromide of ethyl possessed the advantages claimed for it in the paper, but it had seemed to him that its anesthetic action was rather too transient for most purposes. He could speak from personal experience of the satisfactory action of a 50-per-cent. solution of antipyrine, hypodermically administered, in certain obscure neuralgic conditions.

(*c*) *Larynx and Trachea.*—DR. D. BRYSON DELAVAN discussed this portion of the subject. He said that intubation was growing in favor as a mode of treating chronic stenosis of the larynx. A new method of treating benign neoplasms of the larynx, and one that bade fair to be exceedingly useful, was the frequent spraying with absolute alcohol. Two cases in his own practice had been completely cured by this simple treatment. In the treatment of malignant disease of the larynx, three recent operations were worthy of consideration. They were: (1) Thyrotomy; (2) complete laryngectomy; and (3) laryngectomy, with removal of involved glands. Dr. J. Solis Cohen's plan of attaching the divided end of the trachea to the edges of the cervical wound was a good one, for it decidedly diminished the chance of inspiration pneumonia, and in several cases so treated there had been quite good phonation. Tracheotomy should precede thyrotomy by several days, and in dividing the cartilage it is well to interrupt the continuity of the incision and form a sort of angular recess, so as to assist in keeping the cartilaginous margins in coaptation after the operation. One of the best methods yet proposed for the treatment of tubercular laryngitis was that brought forward recently by Dr. W. F. Chappell, viz., submucous injections of creosote into the diseased tissue.

DR. ROBERT ABBÉ said that he wished to call attention most emphatically to the fact that operations on the larynx for malignant disease should only be undertaken by surgeons of skill and experience. The only hope of accomplishing much in this class of cases lay in a very radical operation—the removal not only of the neoplasm and the parts evidently infiltrated by it, but also of the neighboring glands. If this were not done, it would be found that owing to the abundant lymphatic supply to the larynx, recurrence would be exceedingly rapid. Feeding after laryngectomy could be accomplished without difficulty by the use of a catheter introduced through the nose. To prevent the passage of blood during the operation into the trachea, he had used a number of small sponges, with strings attached, packed around the common tracheal tube. This had proved much more satisfactory than any of the special devices for this purpose. His experience with laryngeal papillomata had impressed him very strongly with their remarkable tendency to recur after the most thorough excision and cauterization of the parts. He hoped therefore that the new method of treating these benign but very troublesome growths, by spraying with absolute alcohol, would turn out to be all that was claimed for it.

DR. W. F. CHAPPELL said that while the physician must expect to meet with many disappointments in the employment of any method for the relief of laryngeal tuberculosis, recent acquisitions to our knowledge of this subject certainly enabled us to hold out a better prospect of relief than we were formerly enabled to do. Allusion

has been made to his method of treating this condition by injections of creosote. Some of the cases he had treated in this way had exhibited a remarkable degree of benefit, and almost all of them had improved since he had first reported upon them, in March, 1895. Rest was an exceedingly important part of any plan of treating tuberculosis, whether of the larynx or of the lungs.

REVIEWS.

TWENTIETH-CENTURY PRACTICE OF MEDICINE: An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by THOMAS L. STEADMAN, M.D., New York city. In twenty volumes. Vol. VI, Diseases of the Respiratory Organs. New York: William Wood & Co., 1896.

Volume VI of this work, just out and now before us, consists of eight parts by different authors, all of which relate to or have some bearing upon the respiratory organs. The first is by Prosser James, of London, on "Diseases of the Nose." Not only does the interior of that organ receive due attention, but considerable space is devoted to external diseases, including acne, lupus, epithelioma, and even injuries. By placing so much information before the reader in a practical way, the volume is not over large and bulky, though the type is of ample size and clear.

The second part is by Dr. Jonathan Wright, of Brooklyn, N. Y., on "Diseases of the Accessory Sinuses of the Nose," by which he refers to the maxillary (antrum), frontal, ethmoidal, and sphenoidal sinuses. In order to shorten the article the author has, and wisely too, we think, inserted drawings made from specimens rather than occupy time and space by exhaustive anatomical descriptions.

E. J. Moore, M.D., of Bordeaux, contributes the third and fifth parts, the former being on the "Naso-pharynx and Pharynx," and the latter on the "Diseases of the Tonsils." Between these two parts comes a short but practical article on "Diseases of the Ear," by Dr. Albert H. Buck, of New York, though one would hardly expect to find such a subject in a work on diseases of the organs of respiration. Regarding diphtheria-antitoxin, the author of diseases of the tonsils very properly refers to the occasional inconveniences arising from its use as well as the benefits claimed, and states that the method is still being developed.

The sixth part is by Dr. Francke H. Bosworth, of New York, on "Diseases of the Larynx." The reference to the anatomy of the larynx, though brief, is amply sufficient for practical purposes. In fact, throughout the book the author appears to have had in mind what the work professes to be, that is to say, twentieth-century practice. Comparisons are said to be odious, but if we had to pass judgment we should express the opinion that Dr. Bosworth's article is one of the best in the book.

The seventh part is on the "Diseases of the Trachea and Bronchial Tubes," by Sir Thomas Grainger Stewart, of Edinburgh, assisted by Dr. George Alexander Gibson. One need only to read the article on "Asthma" to see how eminently practical and modern are the views held by the authors. In fact, the name of Grainger Stewart alone is guaranty of the soundness of this part.

The eighth and last part in this volume is on "Diseases of the Lungs" (exclusive of croupous pneumonia and tuberculosis), by Winslow Anderson, M.D., of San Francisco, Cal. Pneumonia and tuberculosis will doubtless appear in the next volume, being omitted here on account of the increased size of the book that would be required. Dr. Anderson's article appears to be all that could be required of the author.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 14, 1896, TO FEBRUARY 3, 1896.

First Lieutenant Harry M. Hallock, Assistant Surgeon, is relieved from duty at Fort Bayard, New Mexico, and ordered to Fort Logan, Colorado, for duty at that post.

Captain Benjamin L. Ten Eyck, Assistant Surgeon, now at Columbus Barracks, Ohio, is ordered to Fort Niobrara, Neb., for temporary duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 25, 1896.

January 21.—Surgeon C. A. Siegfried, detached from the "Texas" and ordered to the "Columbia." Surgeon W. G. Farwell, detached from the "Columbia" and placed on waiting orders. Passed Assistant Surgeon J. A. Guthrie, detached from the "Texas" and ordered to the "Katahdin."

FOR WEEK ENDING FEBRUARY 1, 1896.

January 27.—Assistant Surgeon A. B. Pusey, detached from the "Cincinnati" and ordered to the "Vermont." Assistant Surgeon G. C. Hubbard, detached from the "Vermont" and ordered to the "Cincinnati."

January 28.—Assistant Surgeon C. M. De Valin, ordered to the naval hospital, Philadelphia.

January 30.—Surgeon J. M. Steele, detached from the Torpedo Station and ordered to special duty on the "Independence." Surgeon M. H. Simons, detached from special duty at Portsmouth, N. H., and ordered to the Torpedo Station.

January 31.—Medical Inspector G. F. Windslow, detached from the "Philadelphia" and granted three months' leave. Surgeon J. A. Hawke, detached from the "Baltimore" and ordered to the "Philadelphia," as fleet surgeon of the Pacific Station. Assistant Surgeon A. Farenholt, detached from the "Baltimore" and ordered to the "Monterey."

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE MONTH ENDING JANUARY 31, 1896.

STONER, G. W., Surgeon. Granted leave of absence for thirty days with pay, and not to exceed sixty days without pay, January 15, 1896.

PETTUS, W. J., Passed Assistant Surgeon. Granted leave of absence for thirty days, January 2, 1896.

MAGRUDER, G. M., Passed Assistant Surgeon. Leave of absence extended nine days, January 2, 1896.

GOODWIN, H. T., Passed Assistant Surgeon. Granted leave of absence for sixty days, January 4, 1896.

SMITH, A. C., Passed Assistant Surgeon. Directed to investigate relative to small-pox in Mississippi and Crittenden counties in Arkansas, January 14, 1896.